

FIG.1

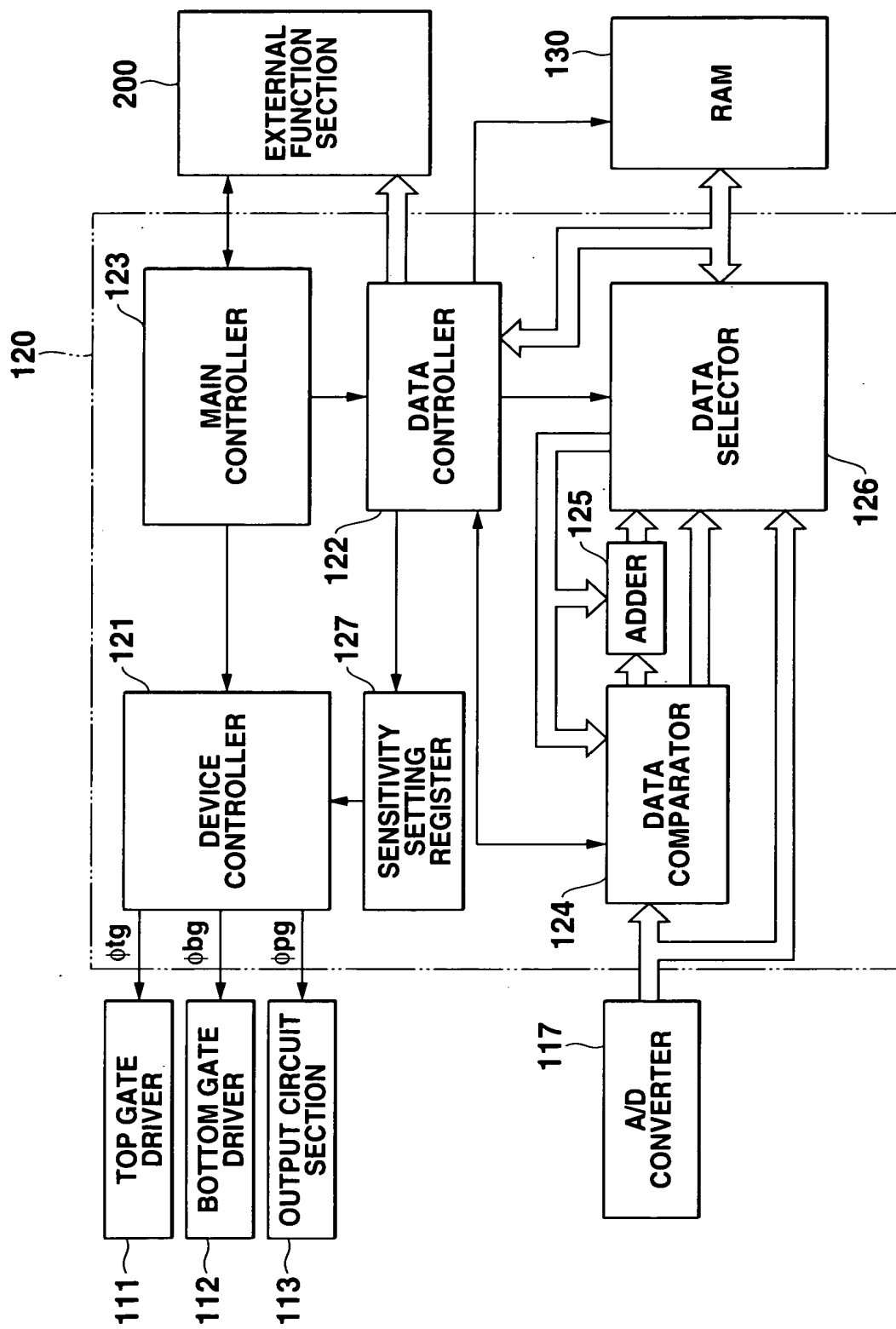


FIG.2

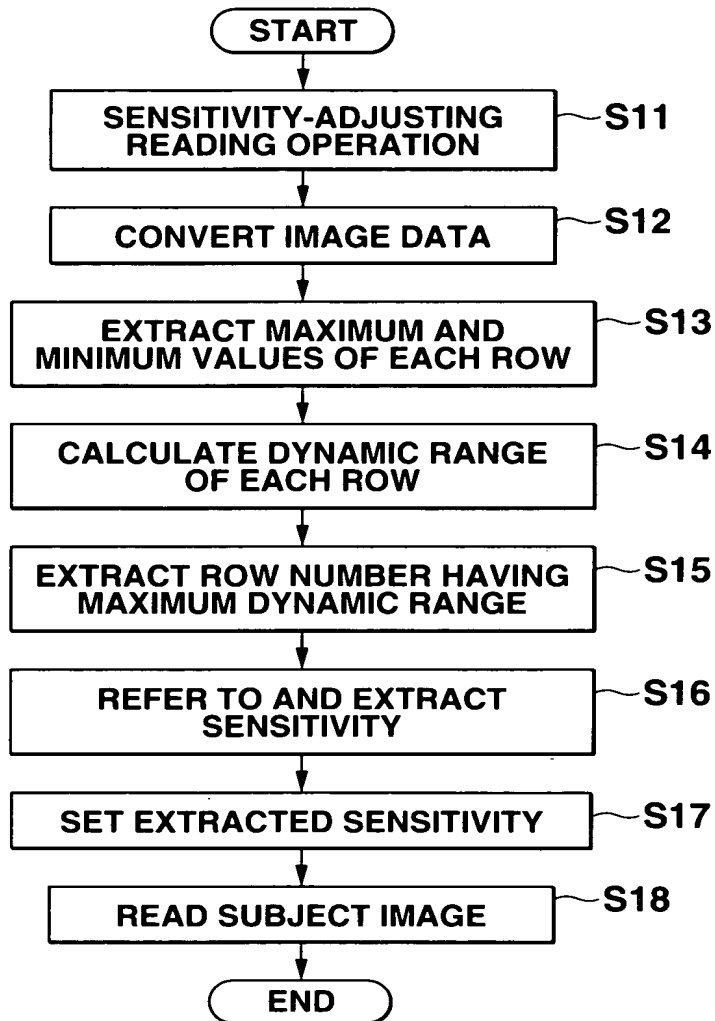


FIG.3

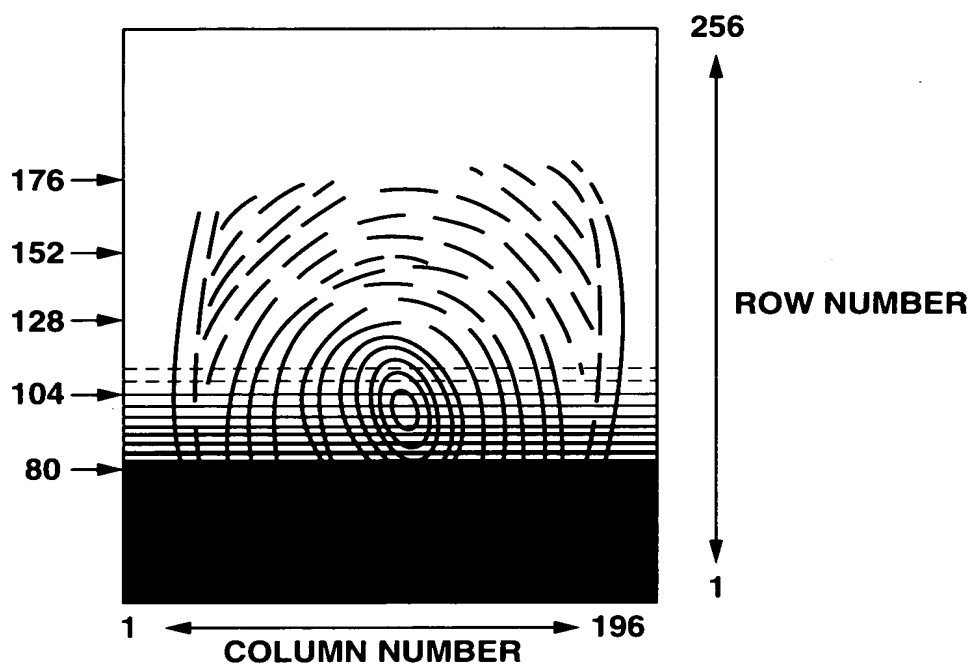


FIG.4

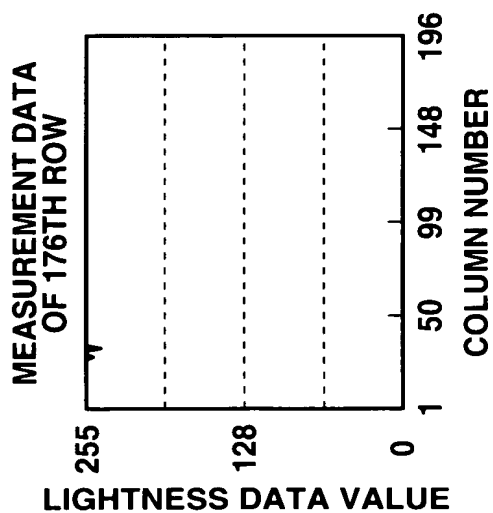


FIG. 5A

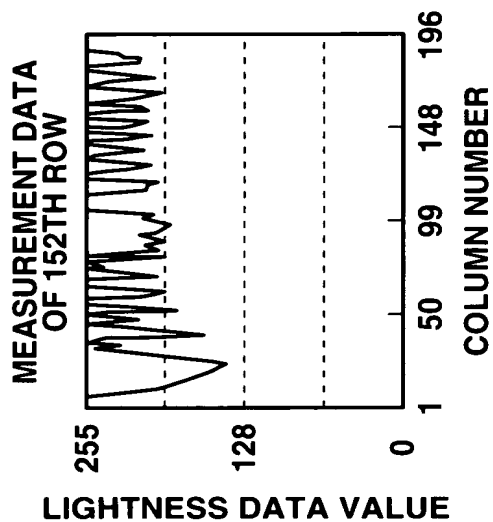


FIG. 5B

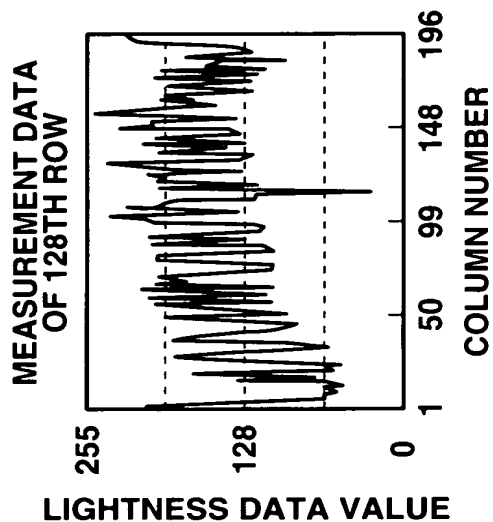


FIG. 5C

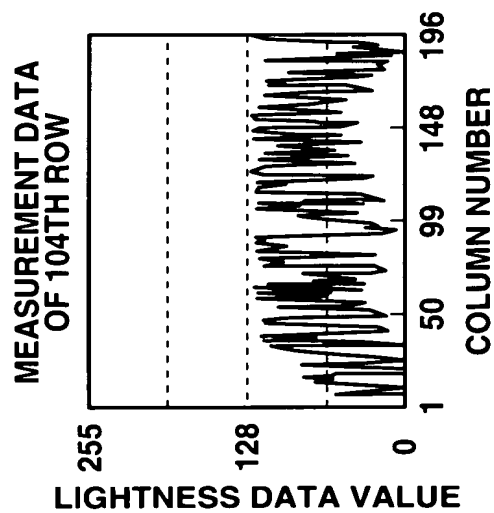


FIG. 5D

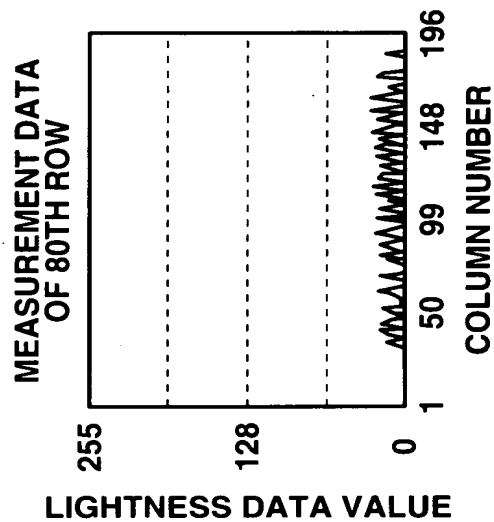


FIG. 5E

FIG.6A

| ROW NUMBER | 80TH ROW | 104TH ROW | 128TH ROW | 152ND ROW | 176TH ROW |
|---------------|----------|-----------|-----------|-----------|-----------|
| MAXIMUM VALUE | 25 | 127 | 251 | 255 | 255 |
| MINIMUM VALUE | 0 | 0 | 27 | 153 | 249 |
| DYNAMIC RANGE | 25 | 127 | 224 | 102 | 6 |



FIG.6B

| ROW NUMBER | 1ST ROW | . . . | 128TH ROW | . . . | 256TH ROW |
|----------------------------|----------------|-------|------------------|-------|------------------|
| CHARGE ACCUMULATING PERIOD | T ₁ | . . . | T ₁₂₈ | . . . | T ₂₅₆ |

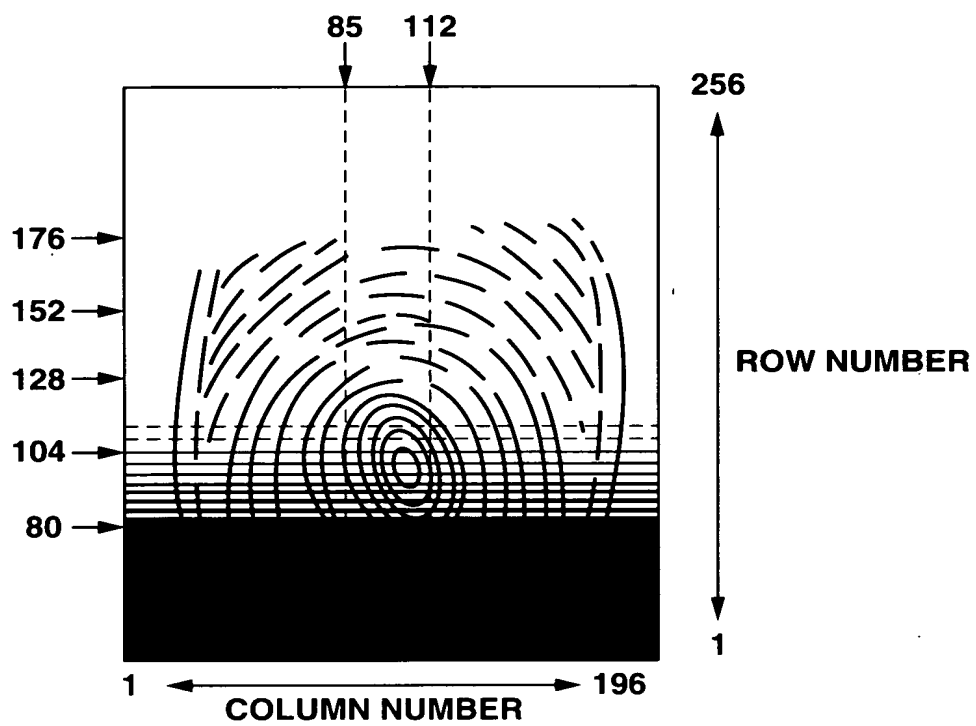


FIG.7

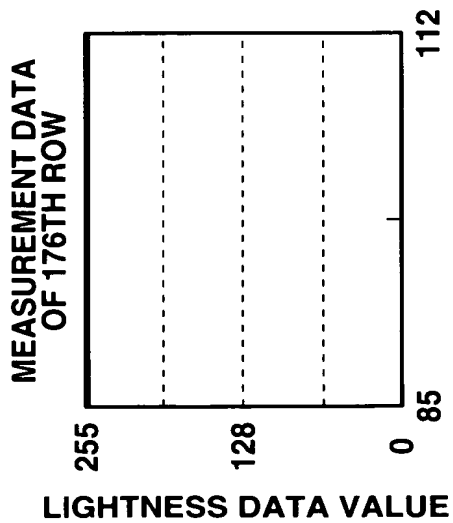


FIG. 8A

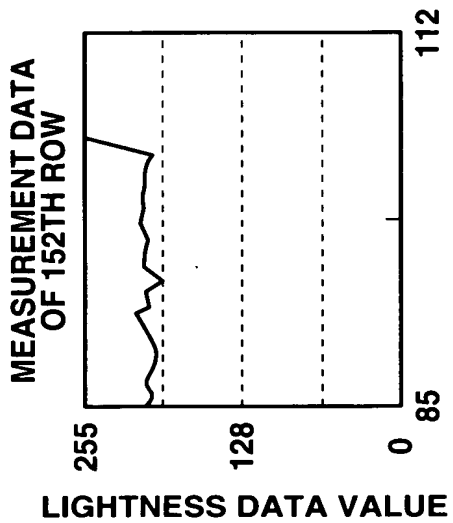


FIG. 8B

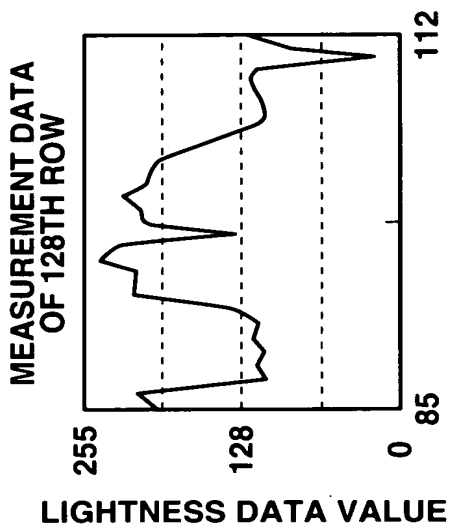


FIG. 8C

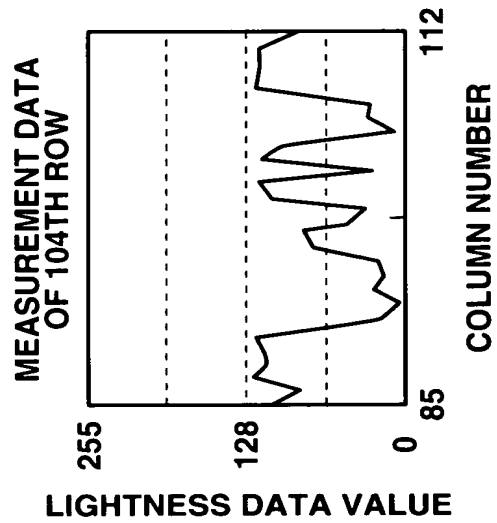


FIG. 8D

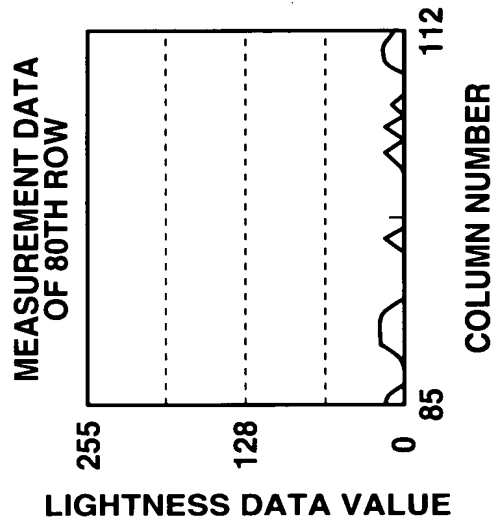


FIG. 8E

FIG. 9A

| ROW NUMBER | 80TH ROW | 104TH ROW | 128TH ROW | 152ND ROW | 176TH ROW |
|---------------|----------|-----------|-----------|-----------|-----------|
| MAXIMUM VALUE | 23 | 117 | 243 | 255 | 255 |
| MINIMUM VALUE | 0 | 9 | 27 | 193 | 255 |
| DYNAMIC RANGE | 23 | 108 | 216 | 62 | 0 |



FIG. 9B

| ROW NUMBER | 1ST ROW | • • • | 128TH ROW | • • • | 256TH ROW |
|----------------------------|---------|-------|-----------|-------|-----------|
| CHARGE ACCUMULATING PERIOD | T1 | • • • | T128 | • • • | T256 |

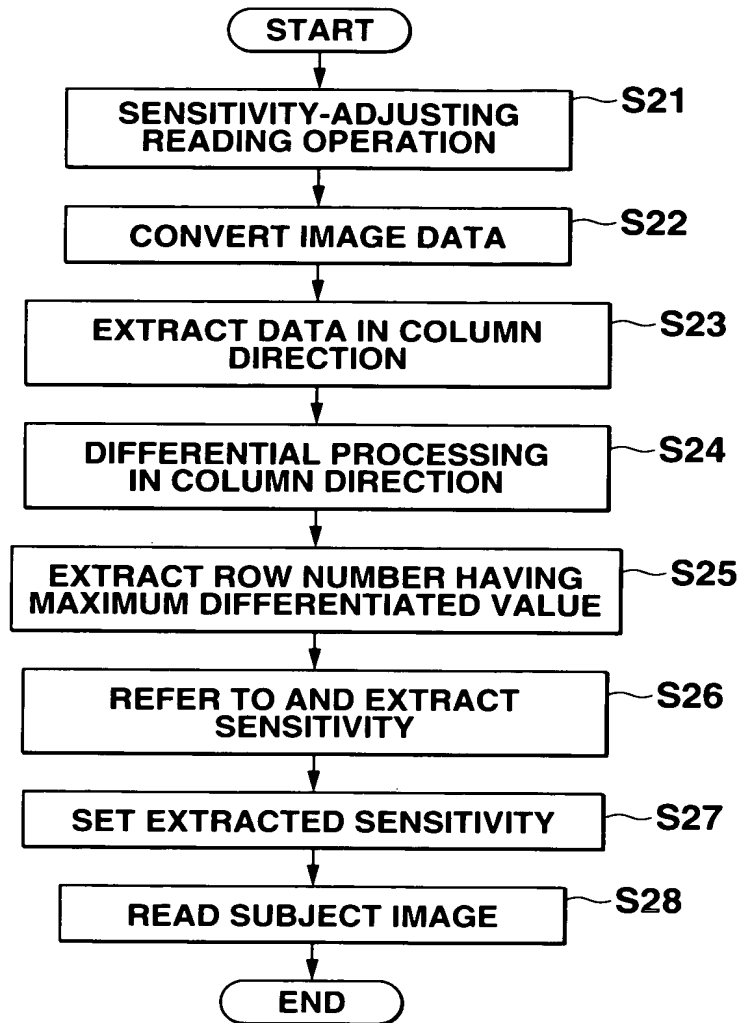


FIG.10

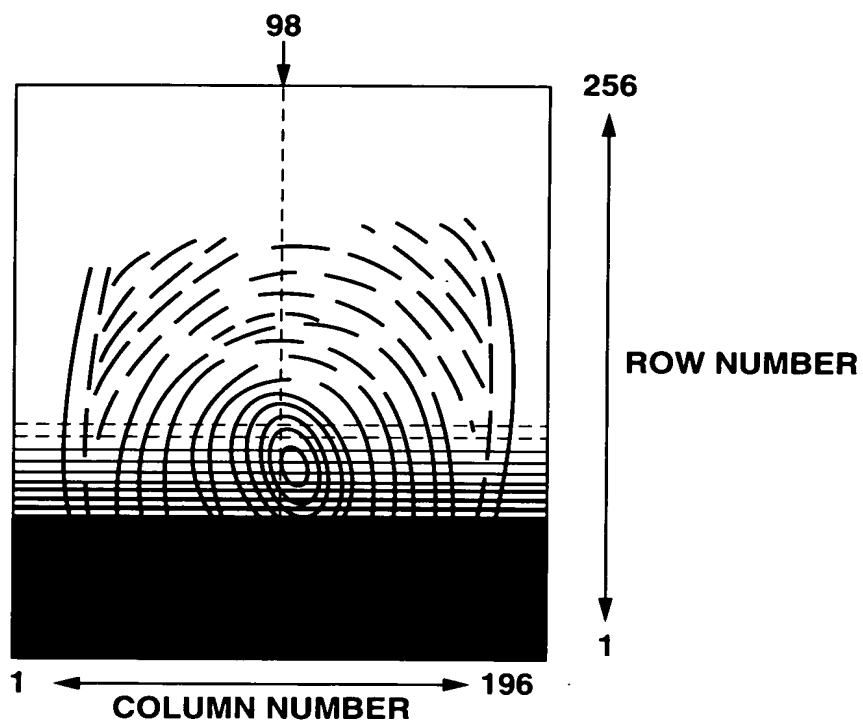


FIG.11

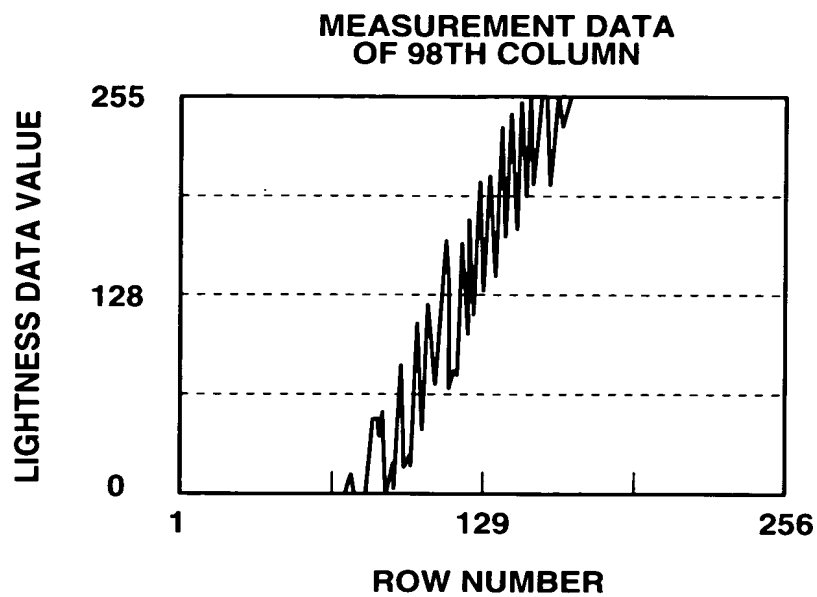


FIG.12A

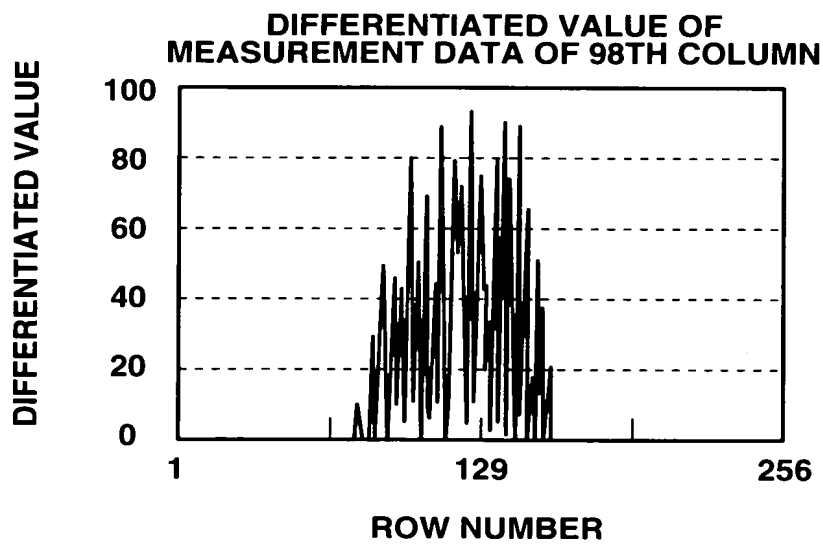
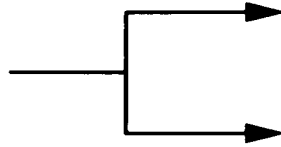


FIG.12B

| ROW NUMBER | . . . | 121ST ROW | 122ND ROW | 123RD ROW | 124TH ROW | 125TH ROW | 126TH ROW | 127TH ROW | 128TH ROW | 129TH ROW | . . . |
|-------------------------|-------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|-------|
| DIFFERENTIATED VALUE | . . . | 80 | 53 | 72 | 5 | 95 | 11 | 76 | 20 | . . . | |

FIG.13A



| ROW NUMBER | . . . | 121ST ROW | 122ND ROW | 123RD ROW | 124TH ROW | 125TH ROW | 126TH ROW | 127TH ROW | 128TH ROW | 129TH ROW | . . . |
|-------------------------------|-------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|-------|
| CHARGE ACCUMULATING PERIOD | . . . | T121 | T122 | T123 | T124 | T125 | T126 | T127 | T128 | T129 | . . . |

FIG.13B

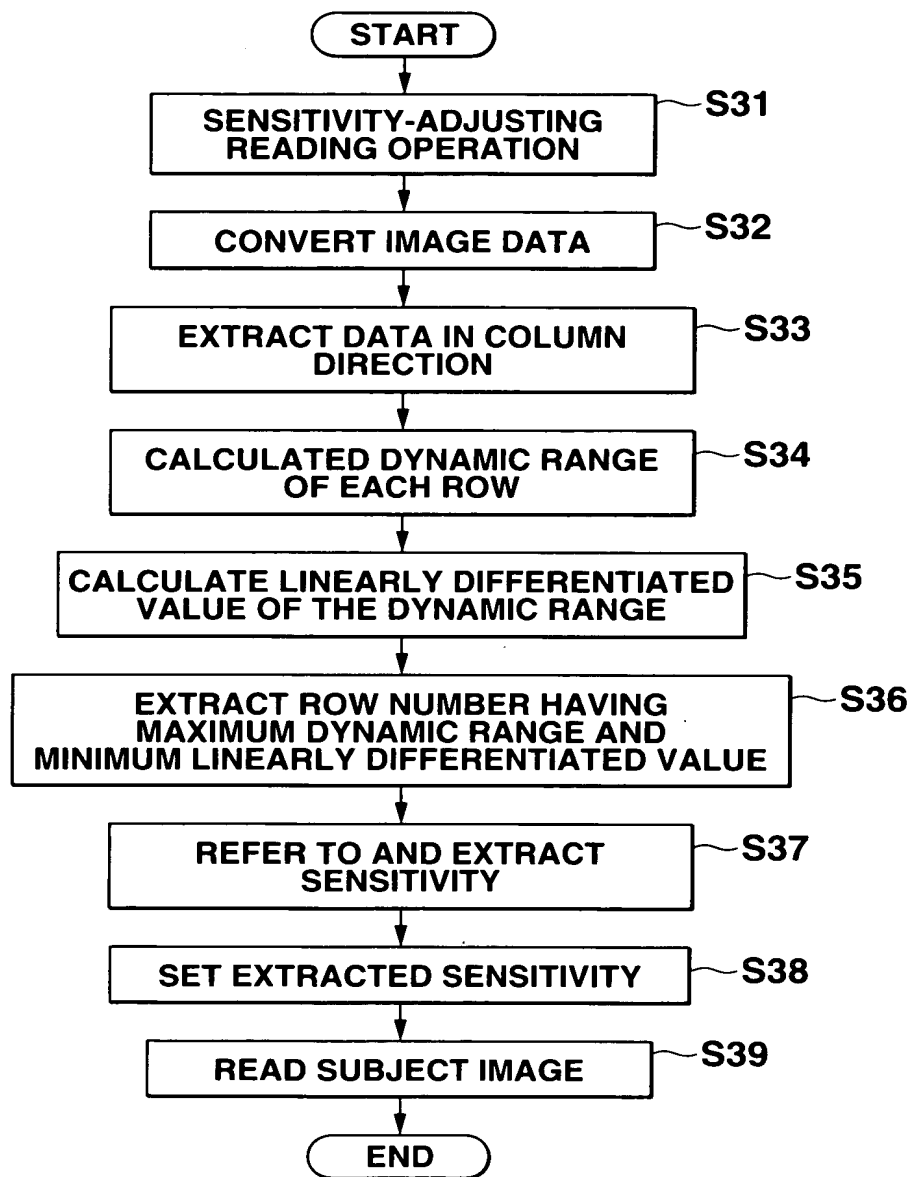


FIG.14

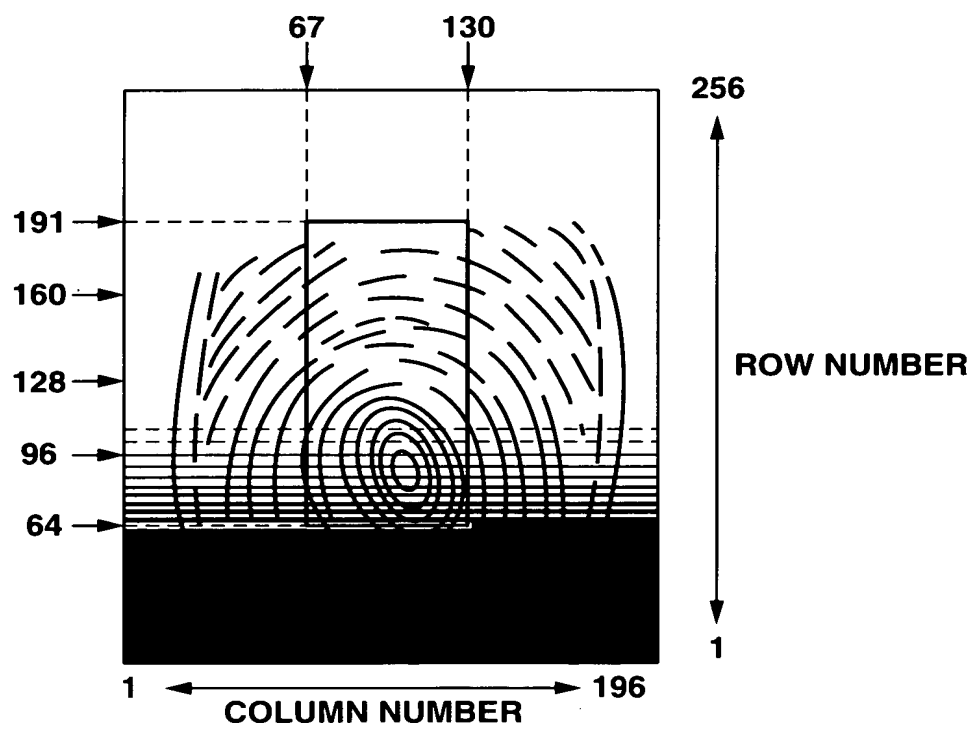


FIG.15

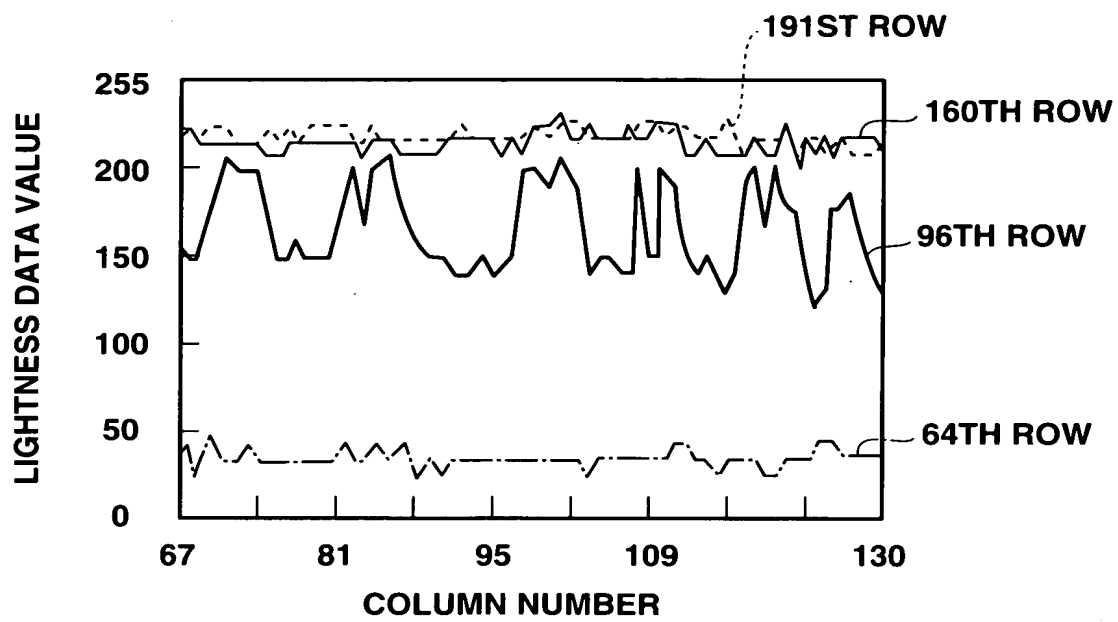


FIG.16

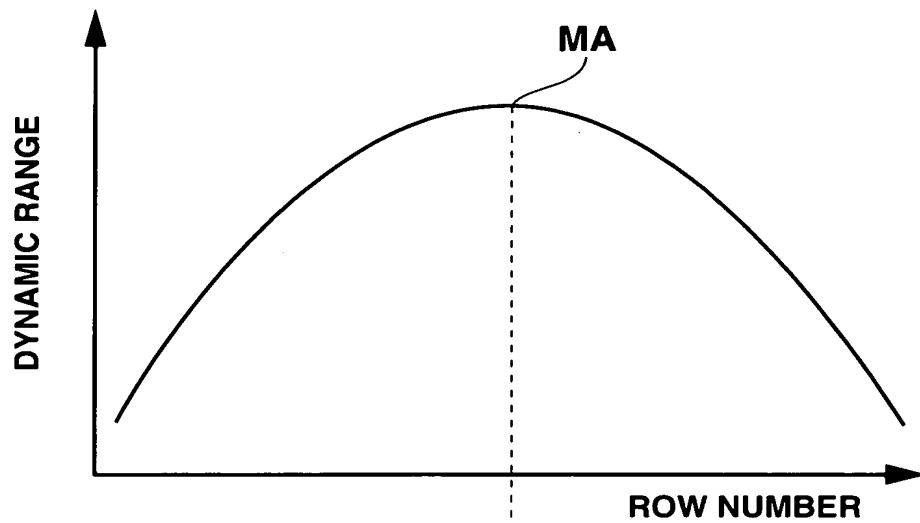


FIG.17A

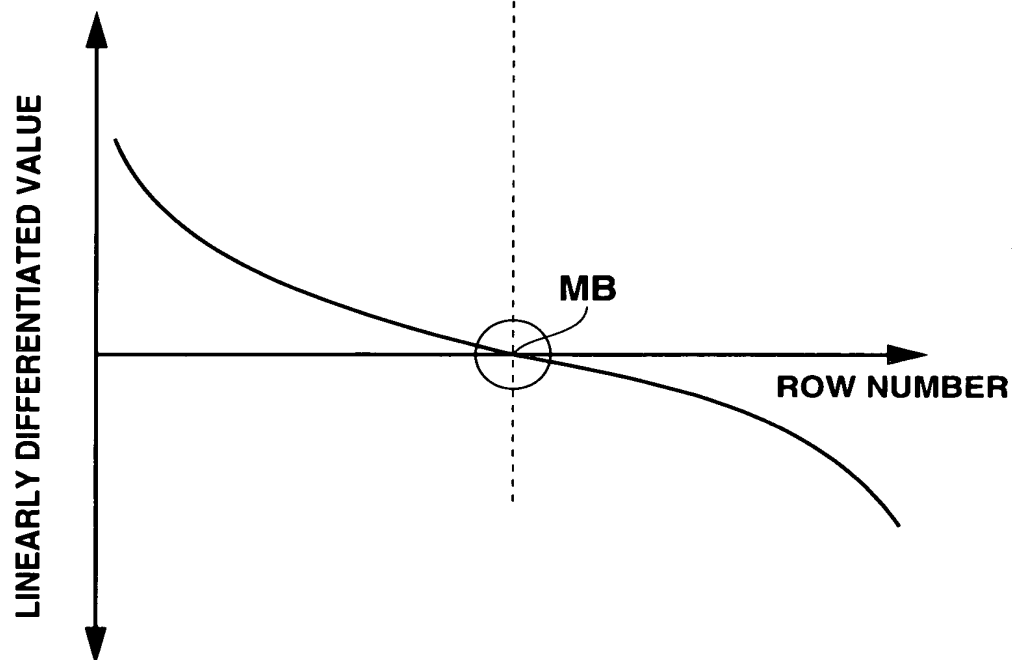
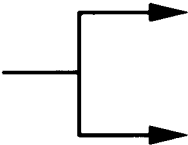


FIG.17B

| | | | | | | | |
|-------------------------------|----------|-------|-----------|---------|----------|-------|-----------|
| ROW NUMBER | 64TH ROW | . . . | Lk-1 ROW | Lk ROW | Lk+1 ROW | . . . | 191ST ROW |
| MAXIMUM VALUE | X64 | . . . | XK-1 | XK | XK+1 | . . . | X191 |
| MINIMUM VALUE | Y64 | . . . | YK-1 | YK | YK+1 | . . . | Y191 |
| DYNAMIC RANGE | R64 | . . . | RK-1 | RK(MAX) | RK+1 | . . . | R191 |
| LINEARLY DIFFERENTIATED VALUE | . . . | Dk-2 | Dk-1(MIN) | Dk | Dk+1 | . . . | . . . |

FIG.18A



| | | | | | | | |
|----------------------------|----------|-------|----------|--------|----------|-------|-----------|
| ROW NUMBER | 64TH ROW | . . . | Lk-1 ROW | Lk ROW | Lk+1 ROW | . . . | 191ST ROW |
| CHARGE ACCUMULATING PERIOD | T64 | . . . | Tk-1 | Tk | Tk+1 | . . . | T191 |

FIG.18B

| ROW NUMBER | 64TH ROW | . . . | L _{k-1} ROW | L _k ROW | L _{k+1} ROW | . . . | 191ST ROW |
|---------------|-----------------|-------|----------------------|---------------------|----------------------|-------|------------------|
| MAXIMUM VALUE | X ₆₄ | . . . | X _{k-1} | X _k | X _{k+1} | . . . | X ₁₉₁ |
| MINIMUM VALUE | Y ₆₄ | . . . | Y _{k-1} | Y _k | Y _{k+1} | . . . | Y ₁₉₁ |
| DYNAMIC RANGE | R ₆₄ | . . . | R _{k-1} | R _{k(MAX)} | R _{k+1} | . . . | R ₁₉₁ |

FIG.19A



| ROW NUMBER | 64TH ROW | . . . | L _{k-1} ROW | L _k ROW | L _{k+1} ROW | . . . | 191ST ROW |
|----------------------------|-----------------|-------|----------------------|--------------------|----------------------|-------|------------------|
| CHARGE ACCUMULATING PERIOD | T ₆₄ | . . . | T _{k-1} | T _k | T _{k+1} | . . . | T ₁₉₁ |

FIG.19B

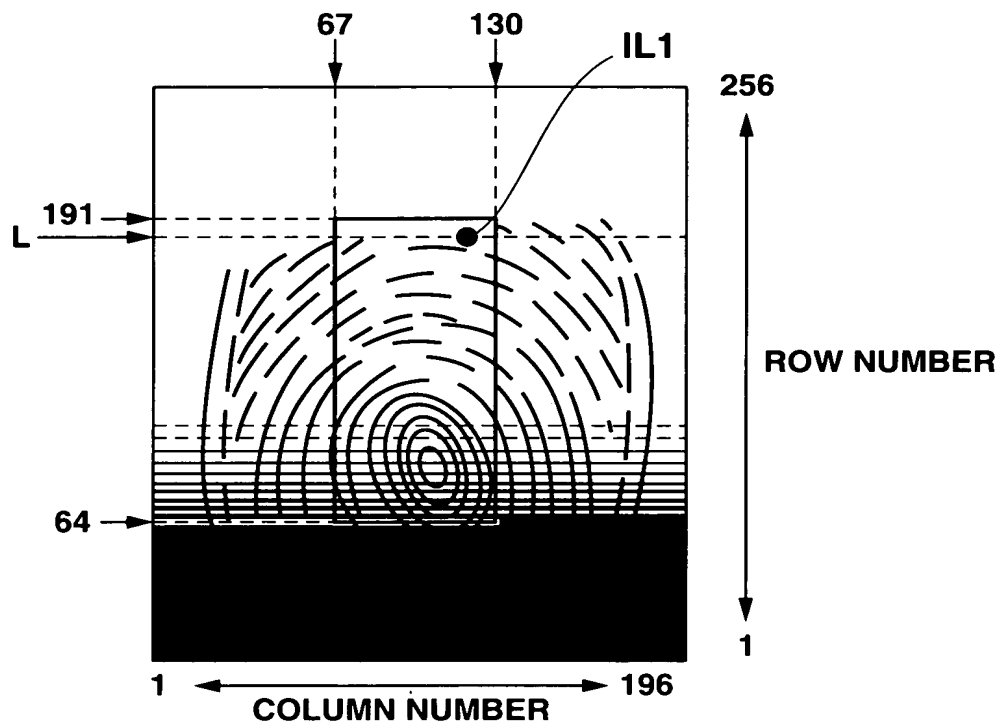


FIG.20

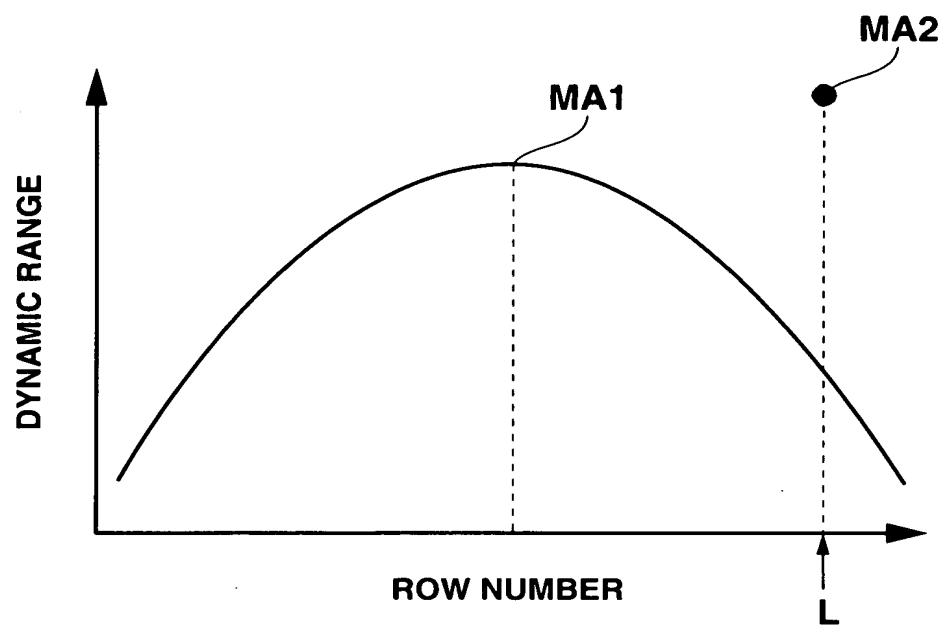


FIG.21

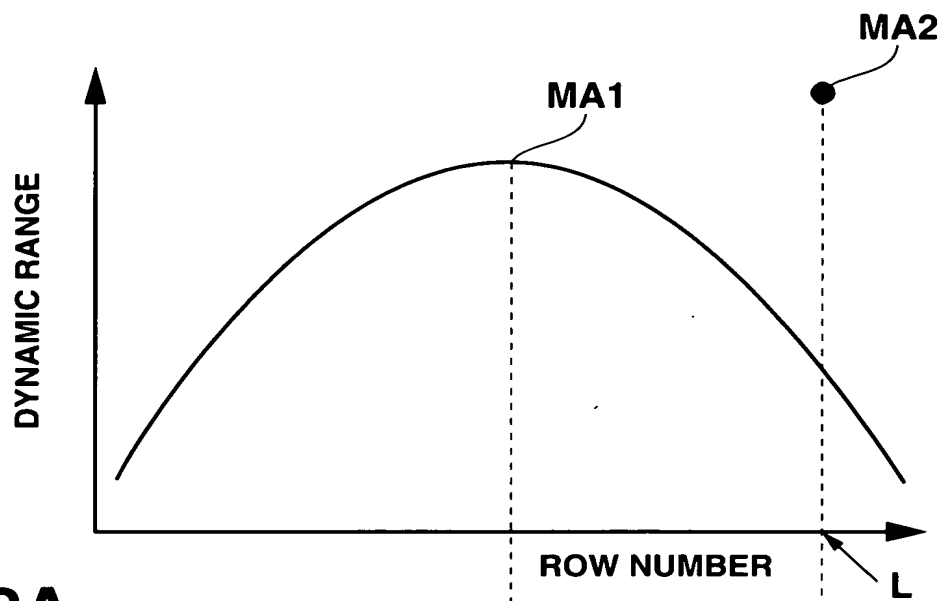


FIG.22A

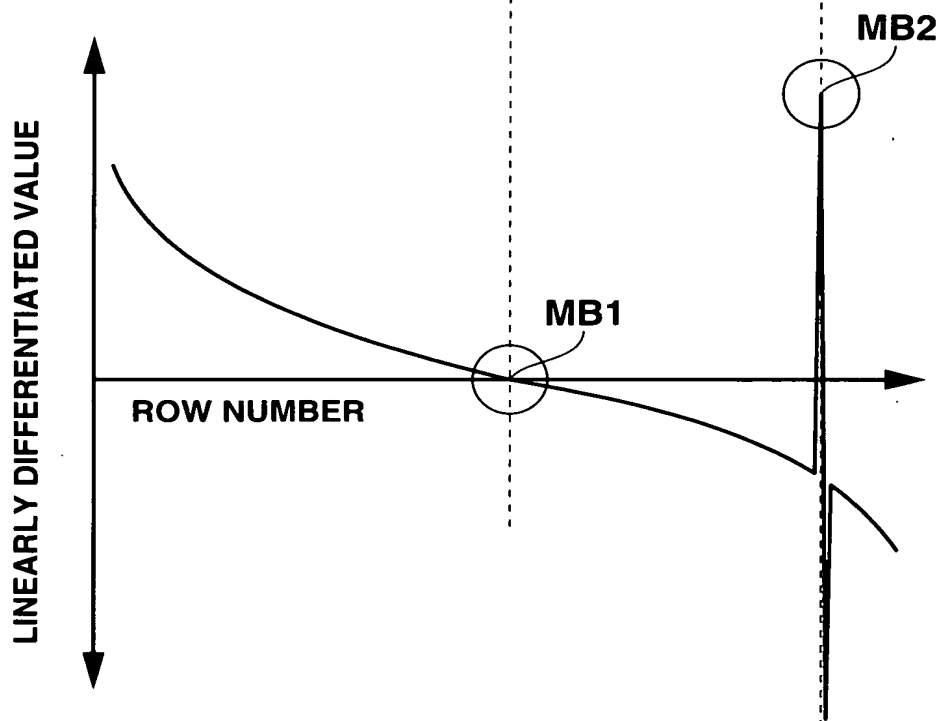


FIG.22B

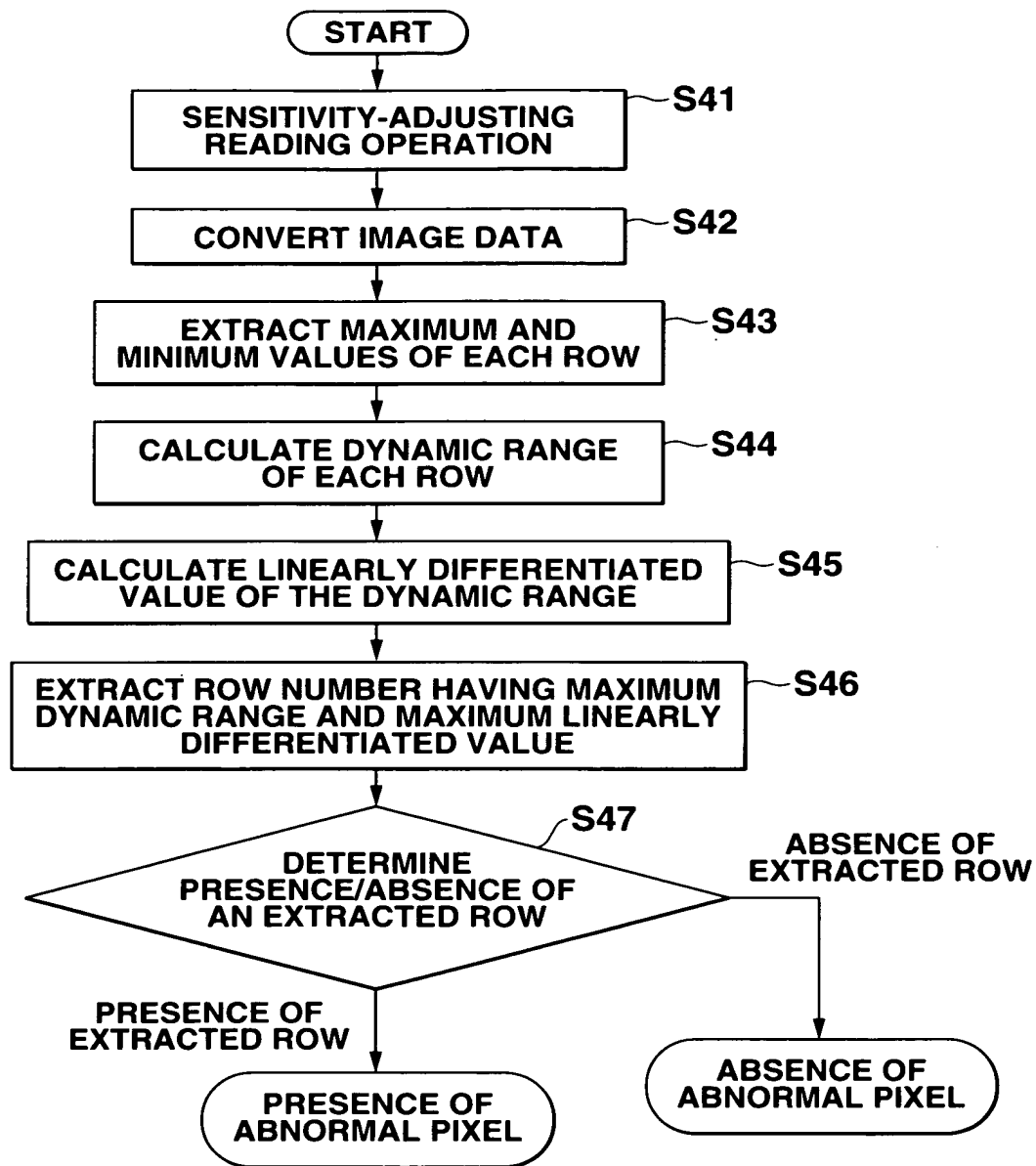


FIG.23

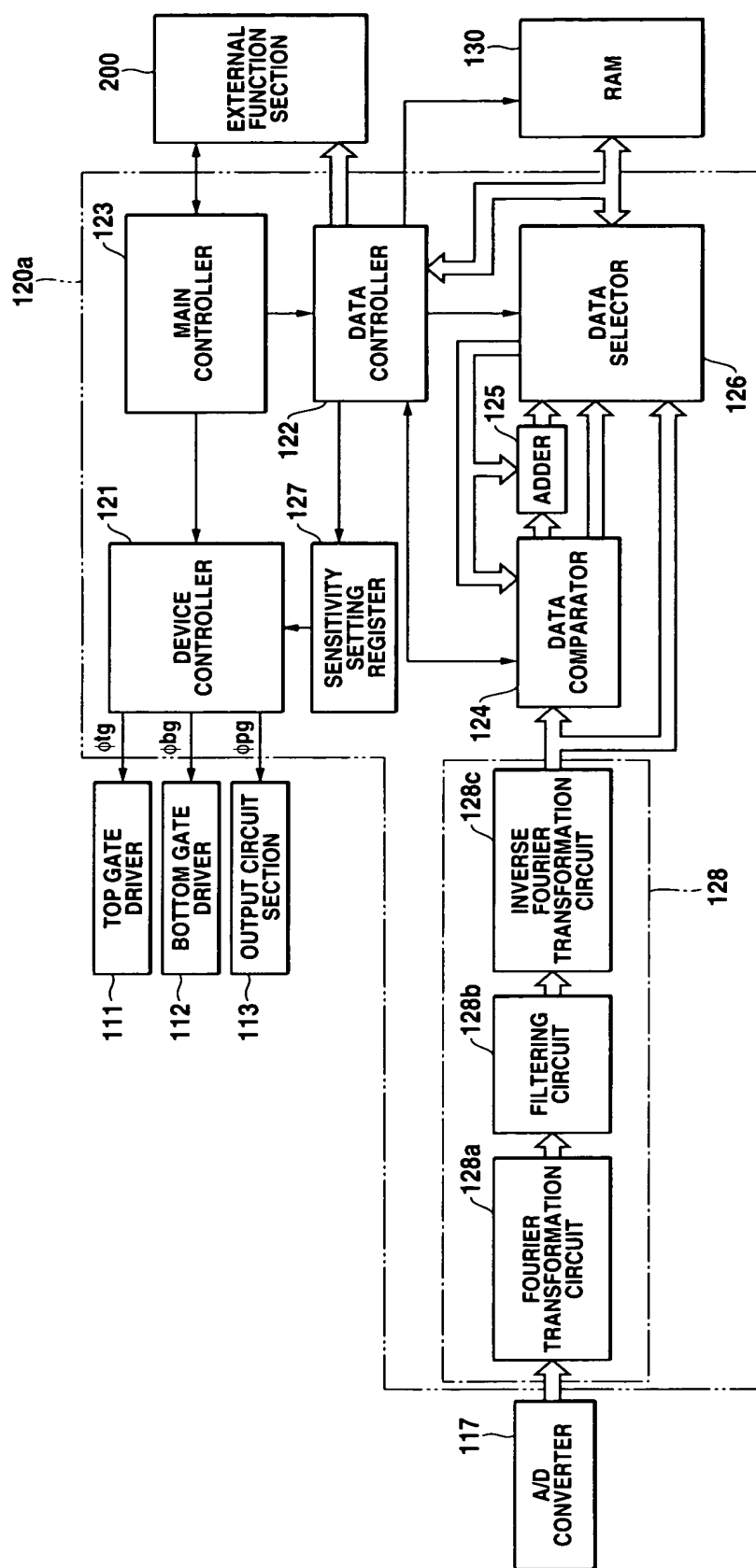


FIG.24

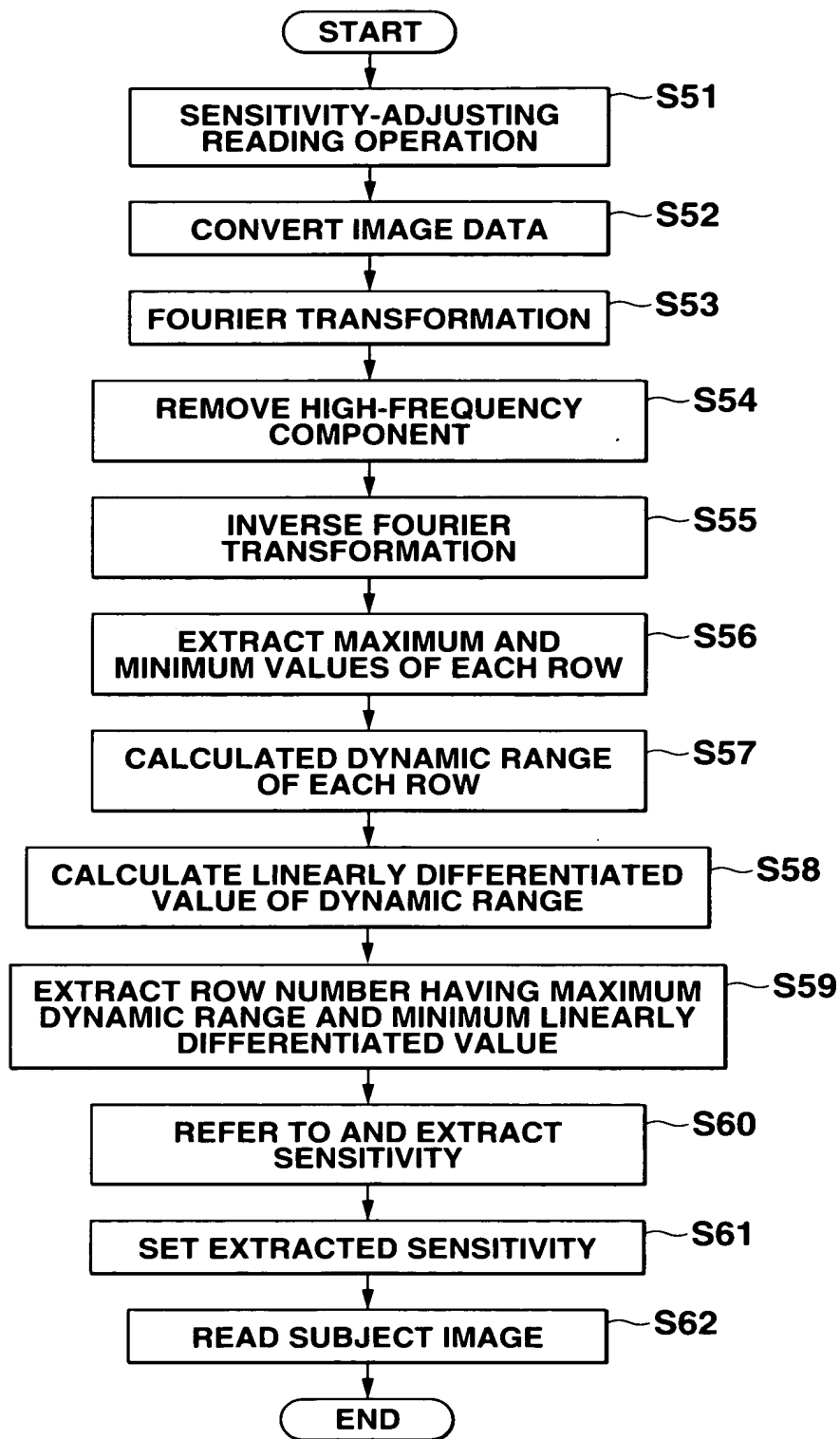


FIG.25

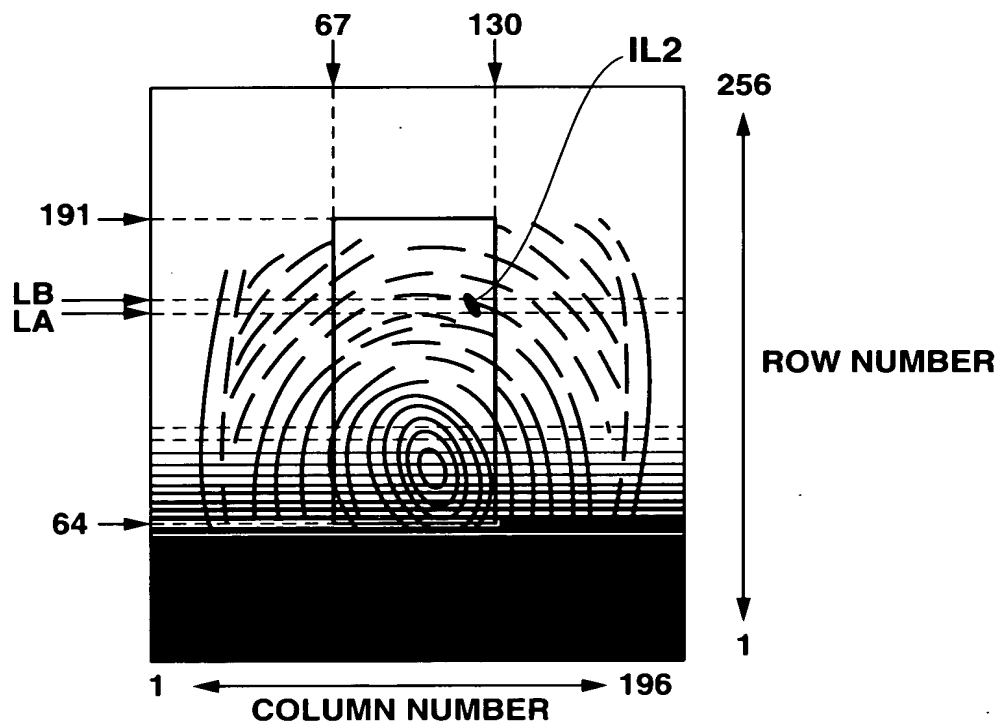


FIG.26

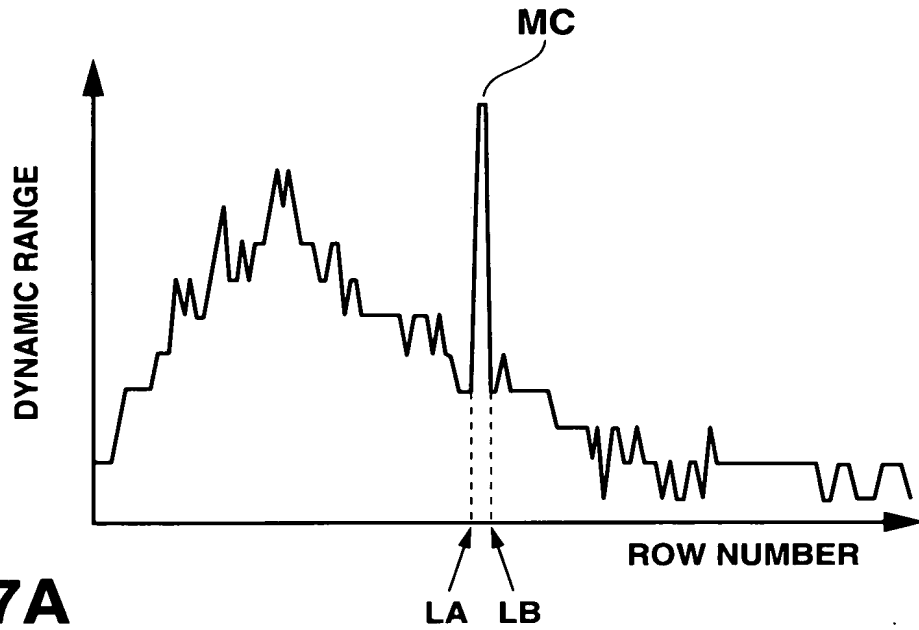


FIG.27A

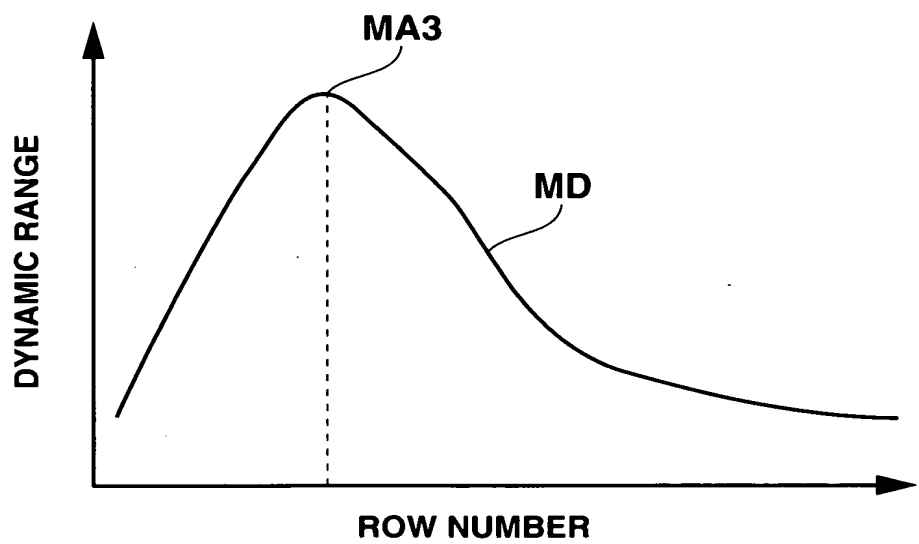


FIG.27B

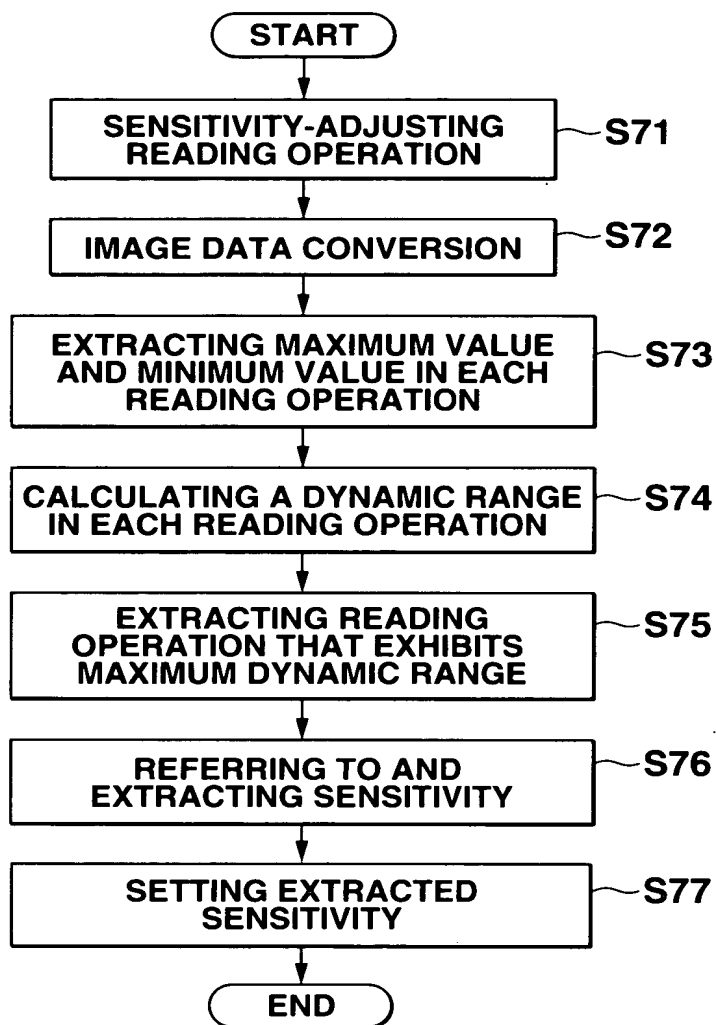


FIG.28

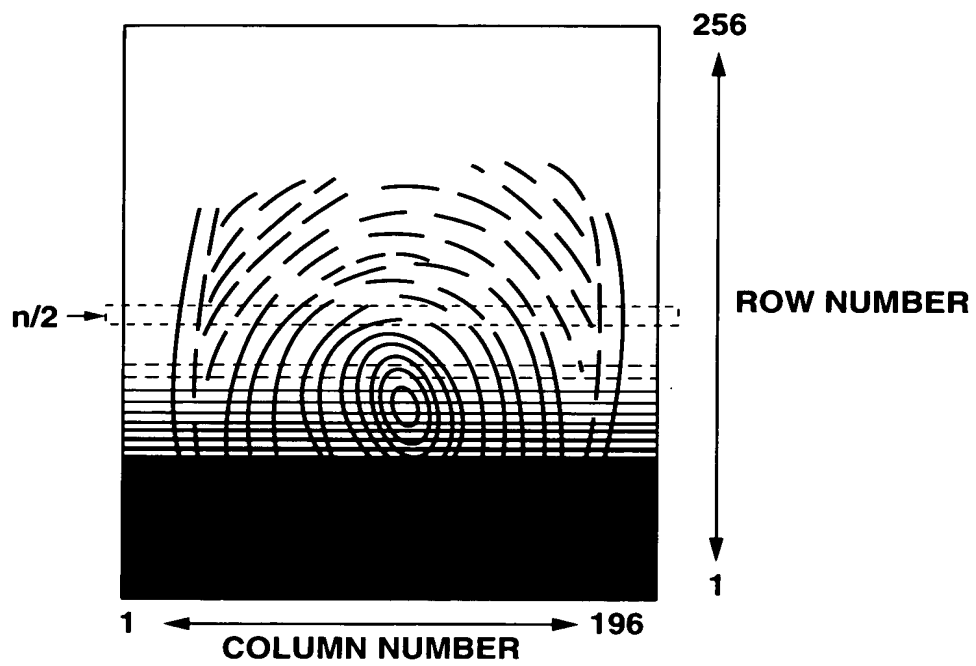


FIG.29

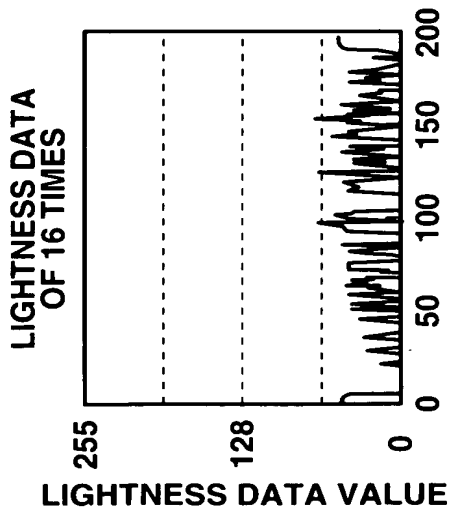


FIG.30A

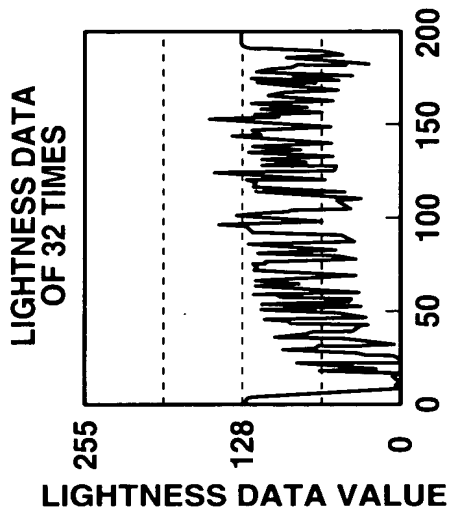


FIG.30B

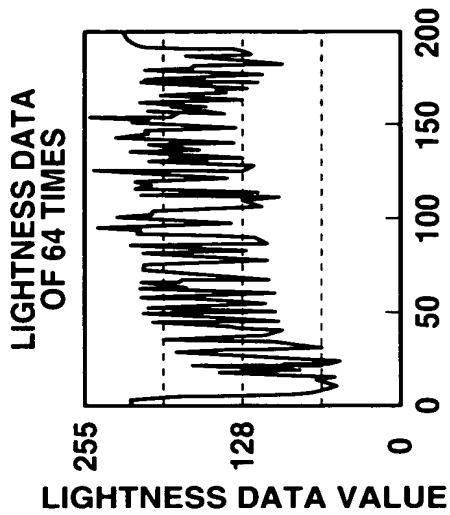


FIG.30C

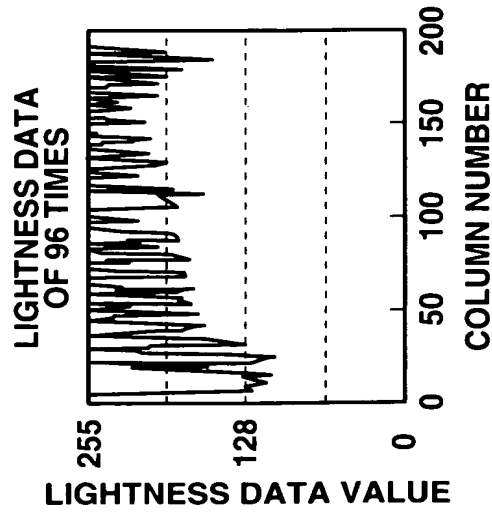


FIG.30D

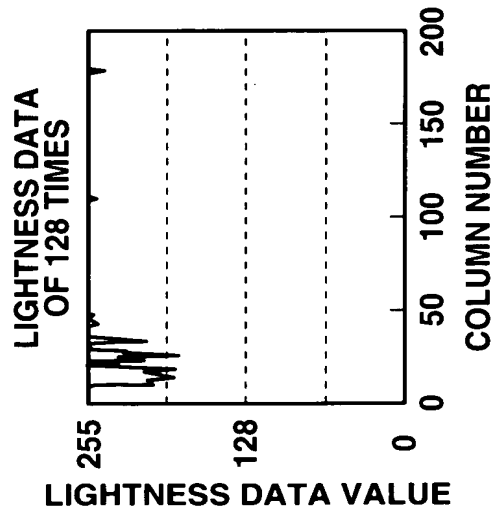


FIG.30E

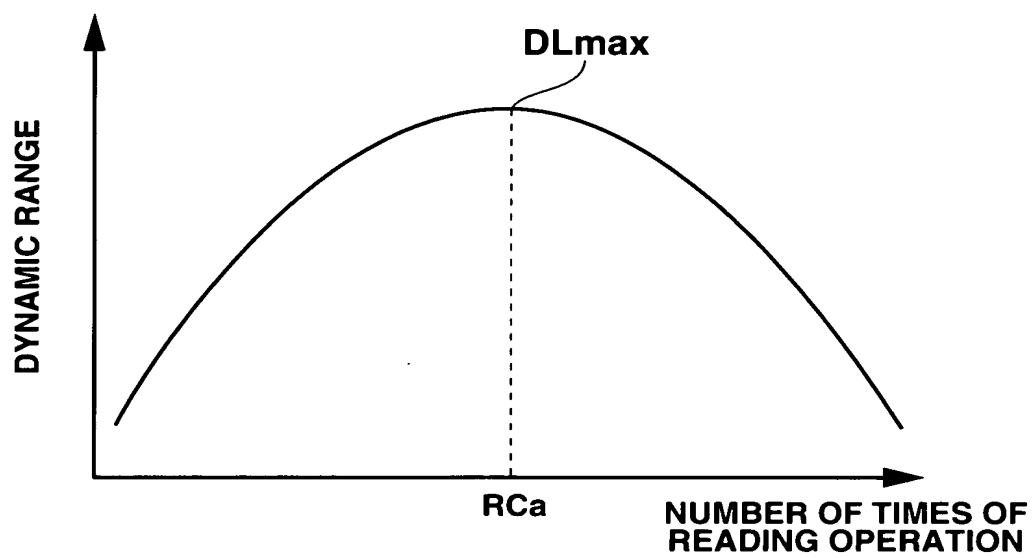


FIG.31

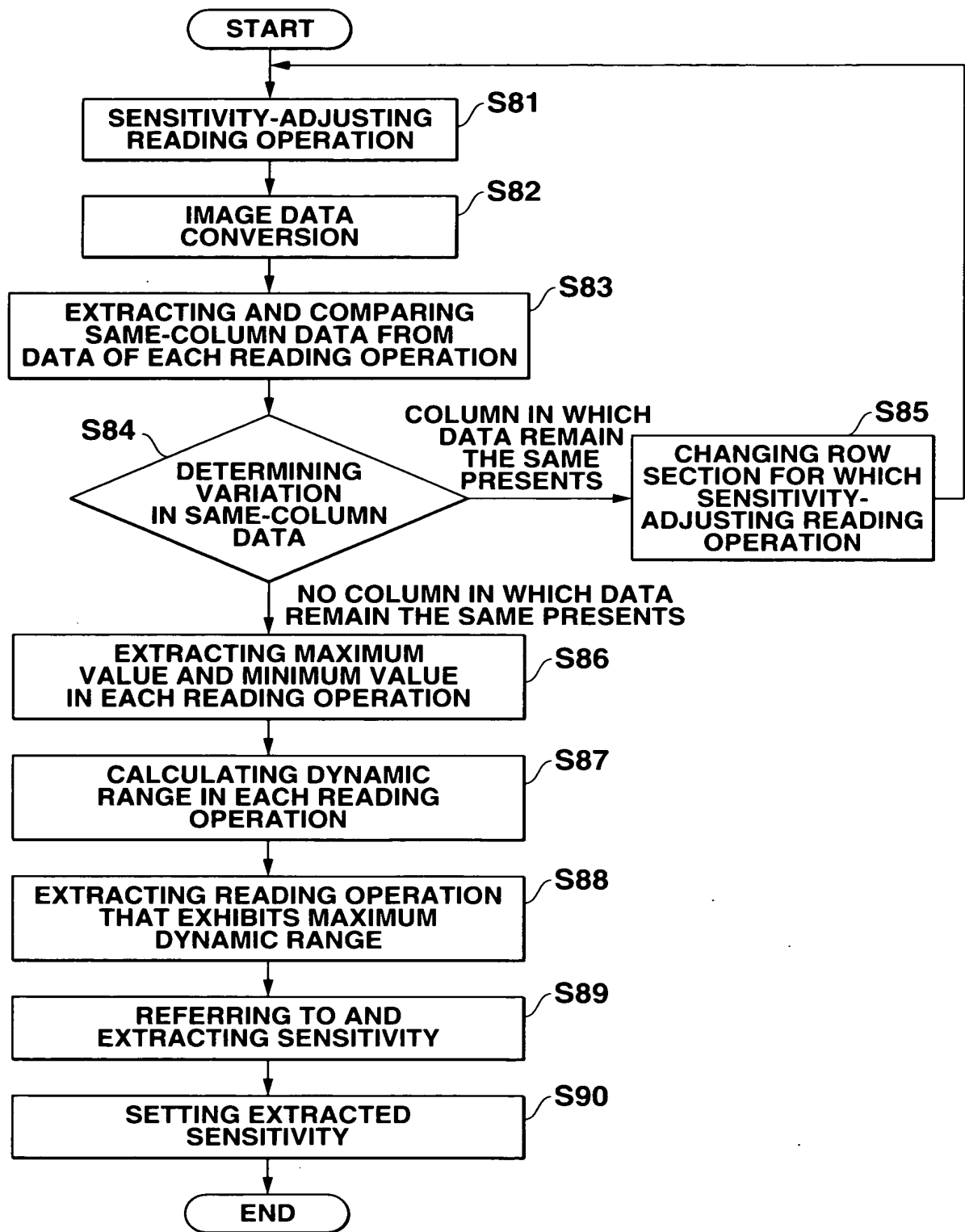


FIG.32

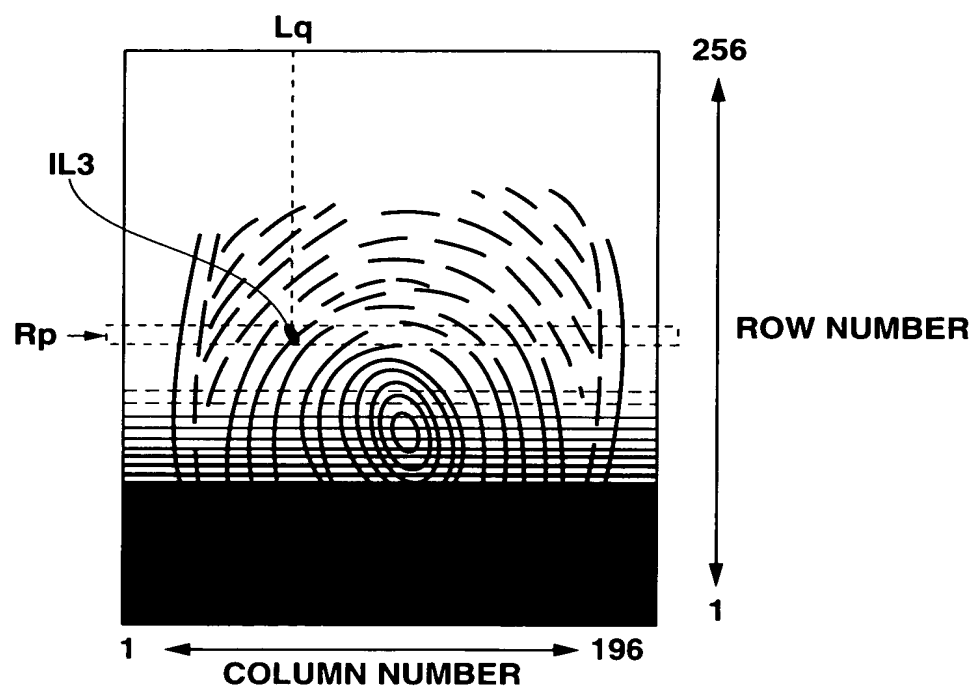


FIG.33

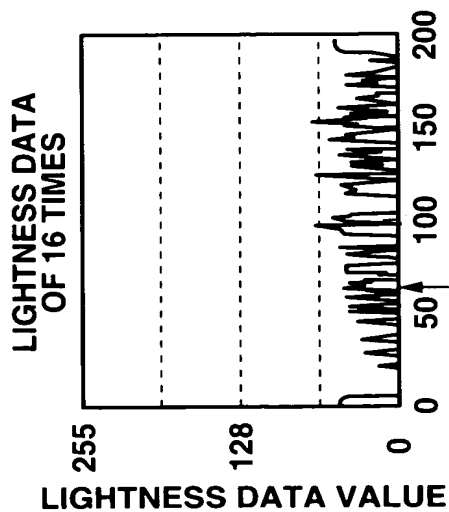


FIG. 34A

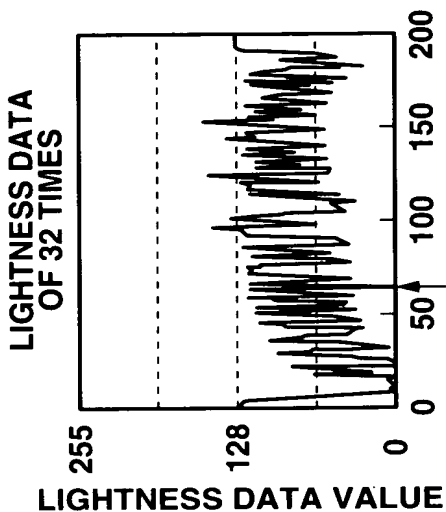


FIG. 34B

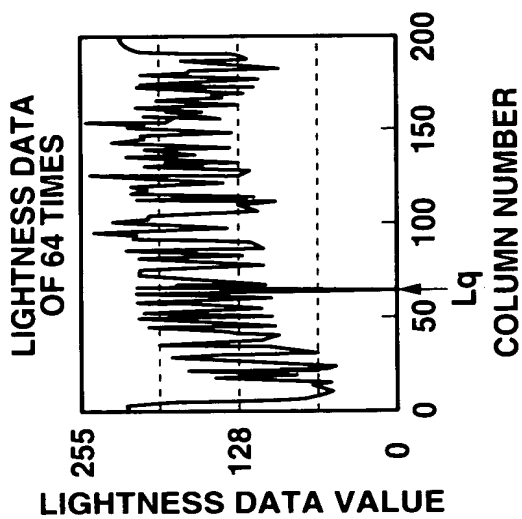


FIG. 34C

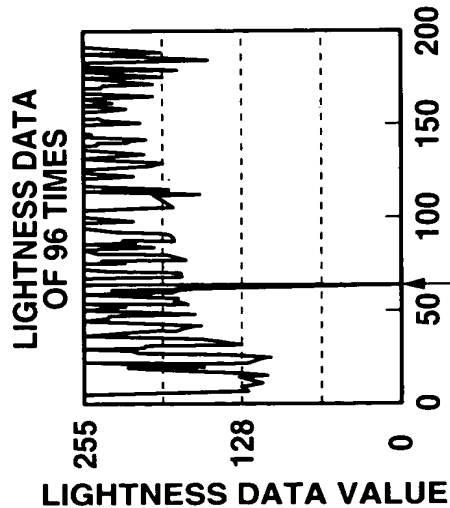


FIG. 34D

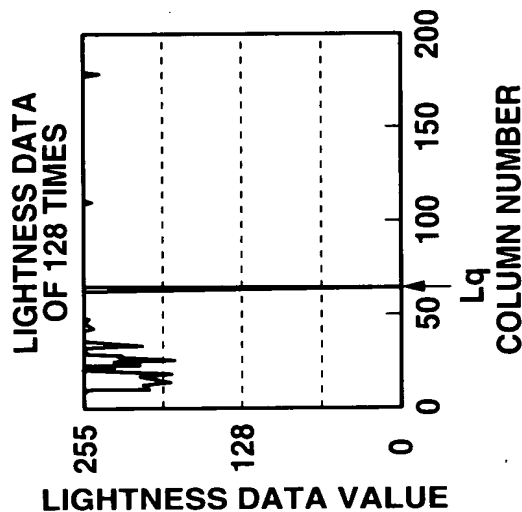


FIG. 34E

FIG.35A

FIG.35E

FIG.35B

FIG.35F

FIG.35C

FIG.35G

FIG.35D

FIG.35H

FIG.35I

FIG.35J

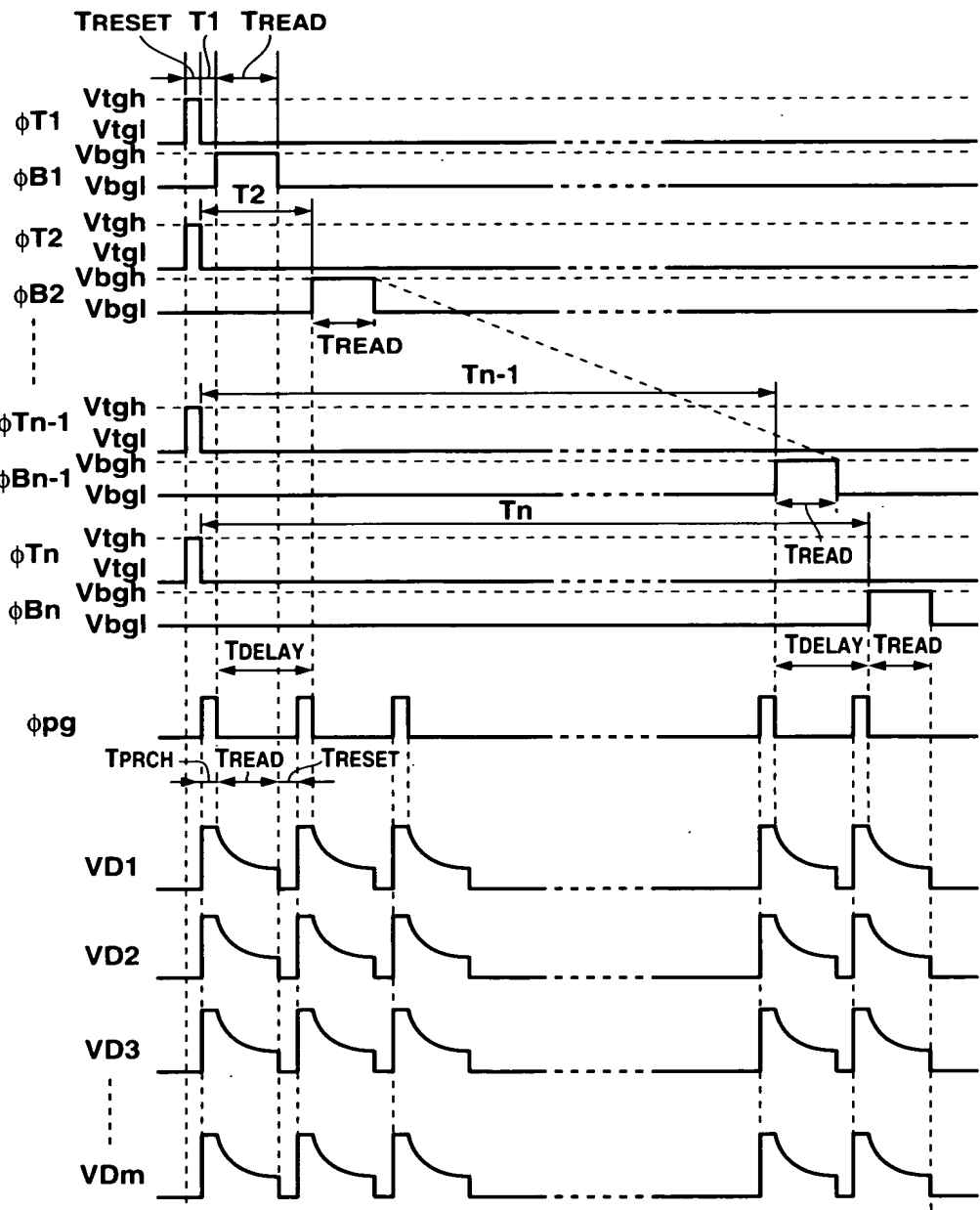


FIG.36A

FIG.36E

FIG.36B

FIG.36F

FIG.36C

FIG.36G

FIG.36D

FIG.36H

FIG.36I

FIG.36J

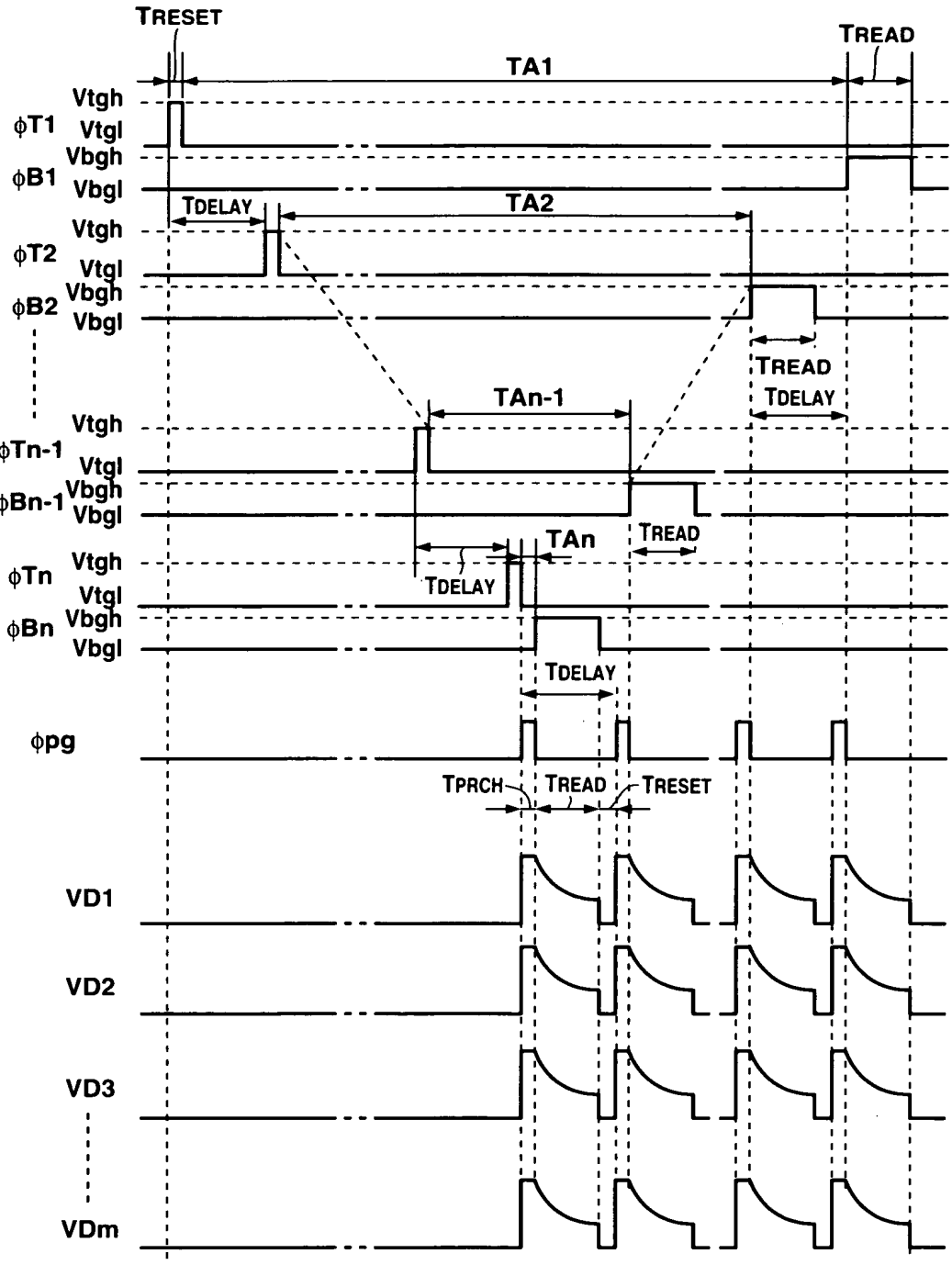


FIG.37A
FIG.37F

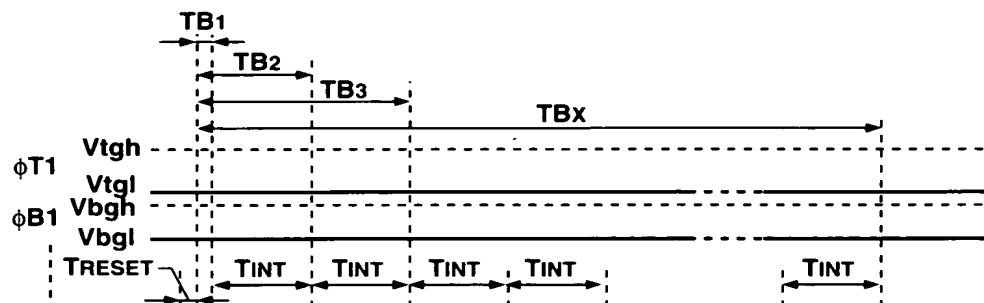


FIG.37B
FIG.37G

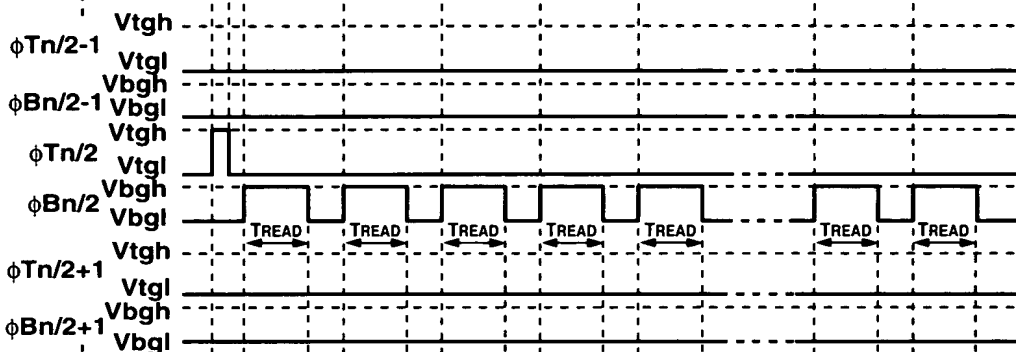


FIG.37C
FIG.37H

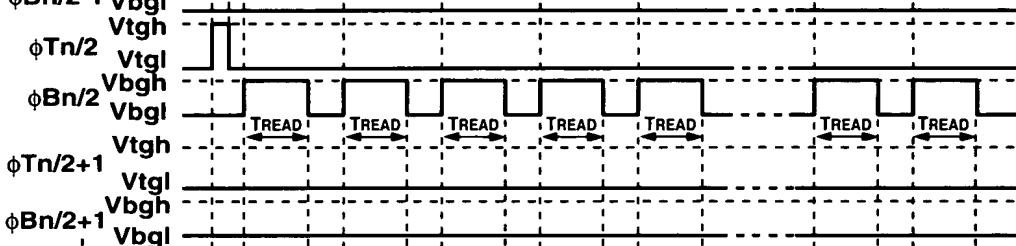


FIG.37D
FIG.37I

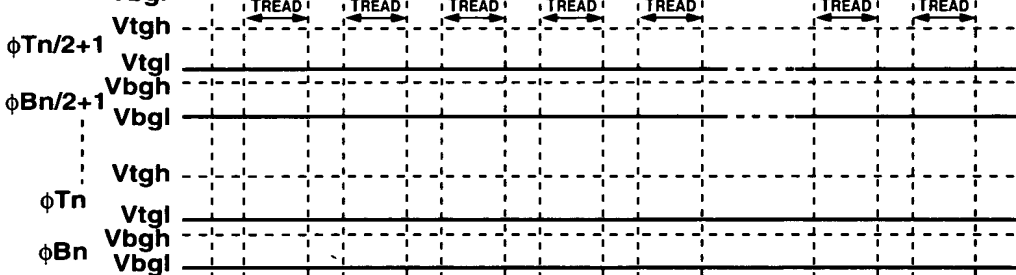


FIG.37E
FIG.37J

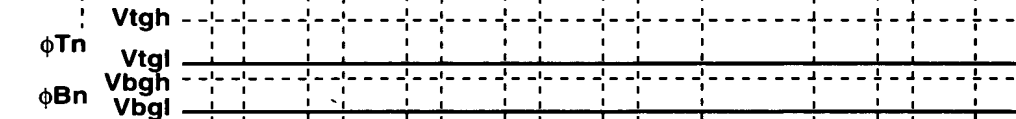


FIG.37K

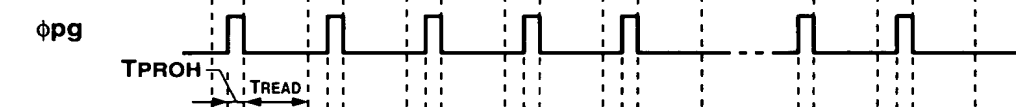
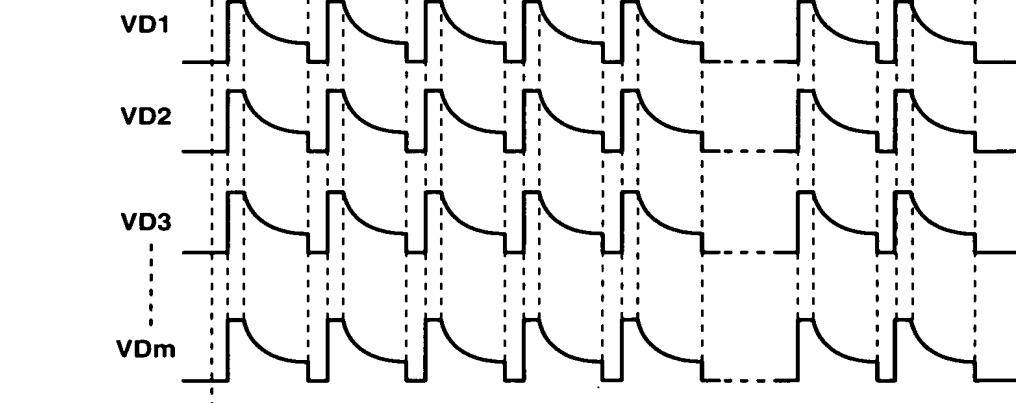
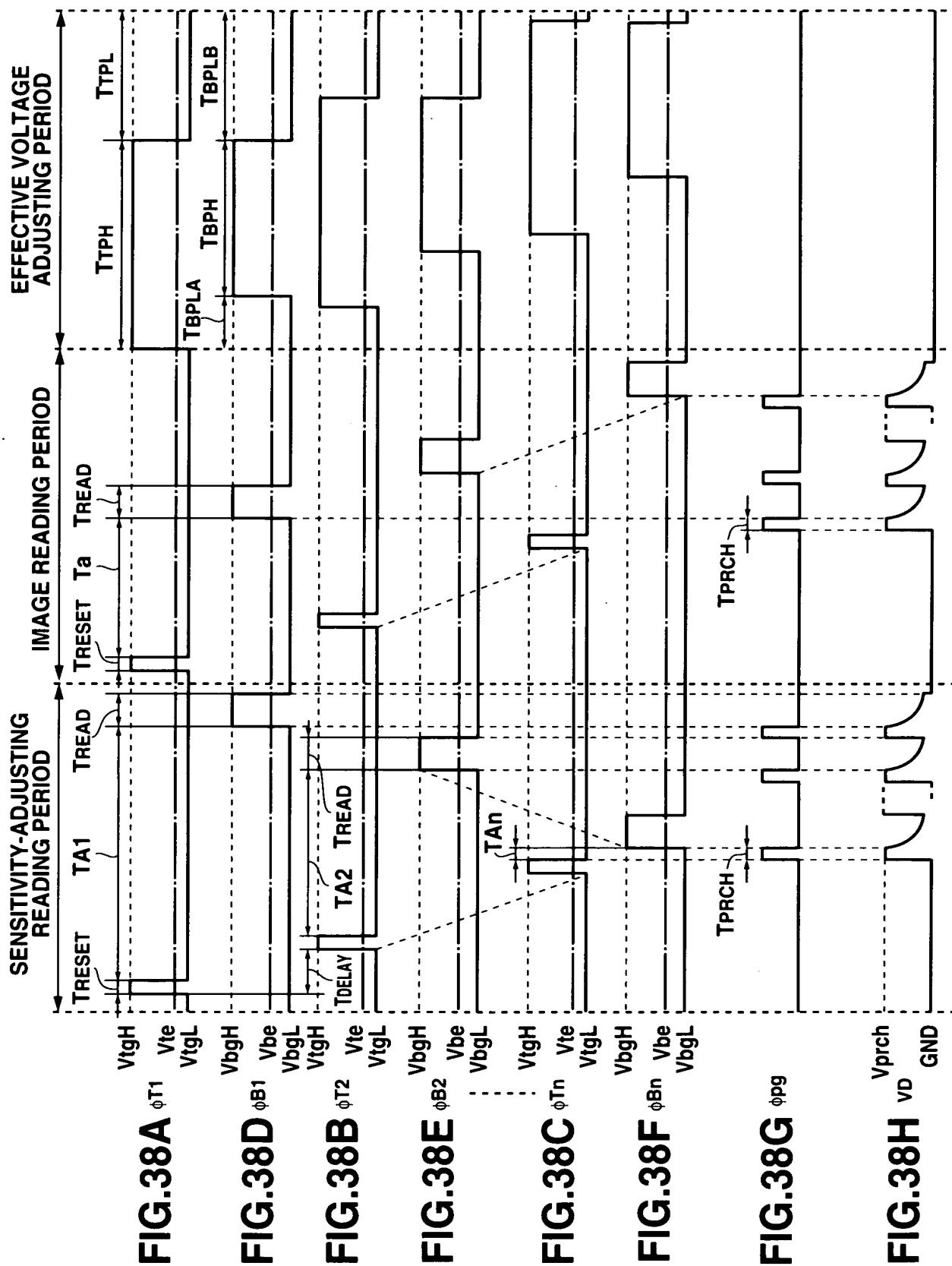


FIG.37L





PRIOR ART

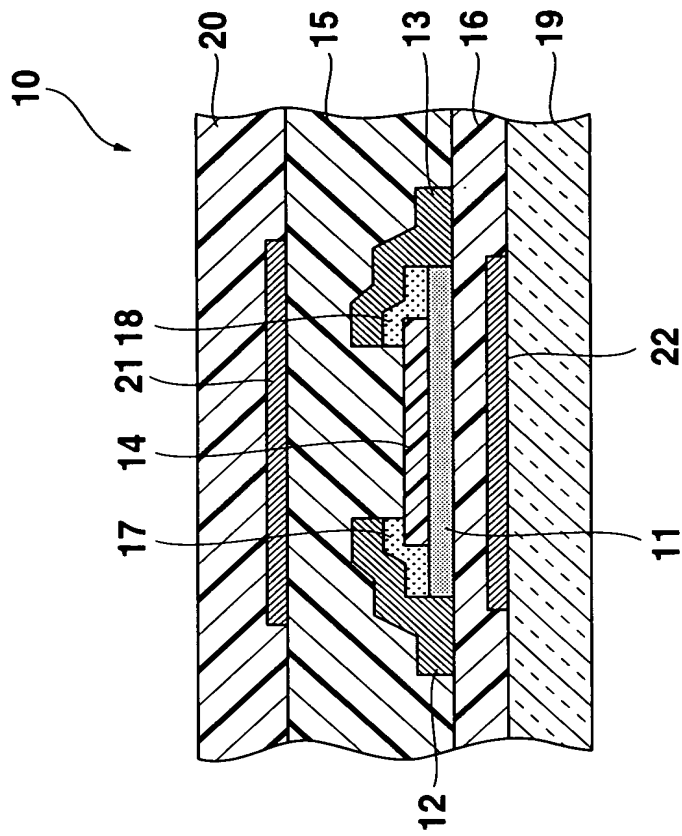


FIG.39A

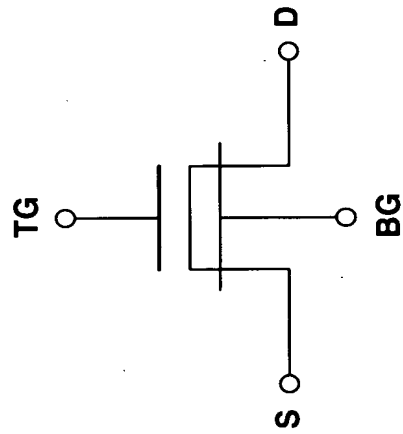


FIG.39B

PRIOR ART

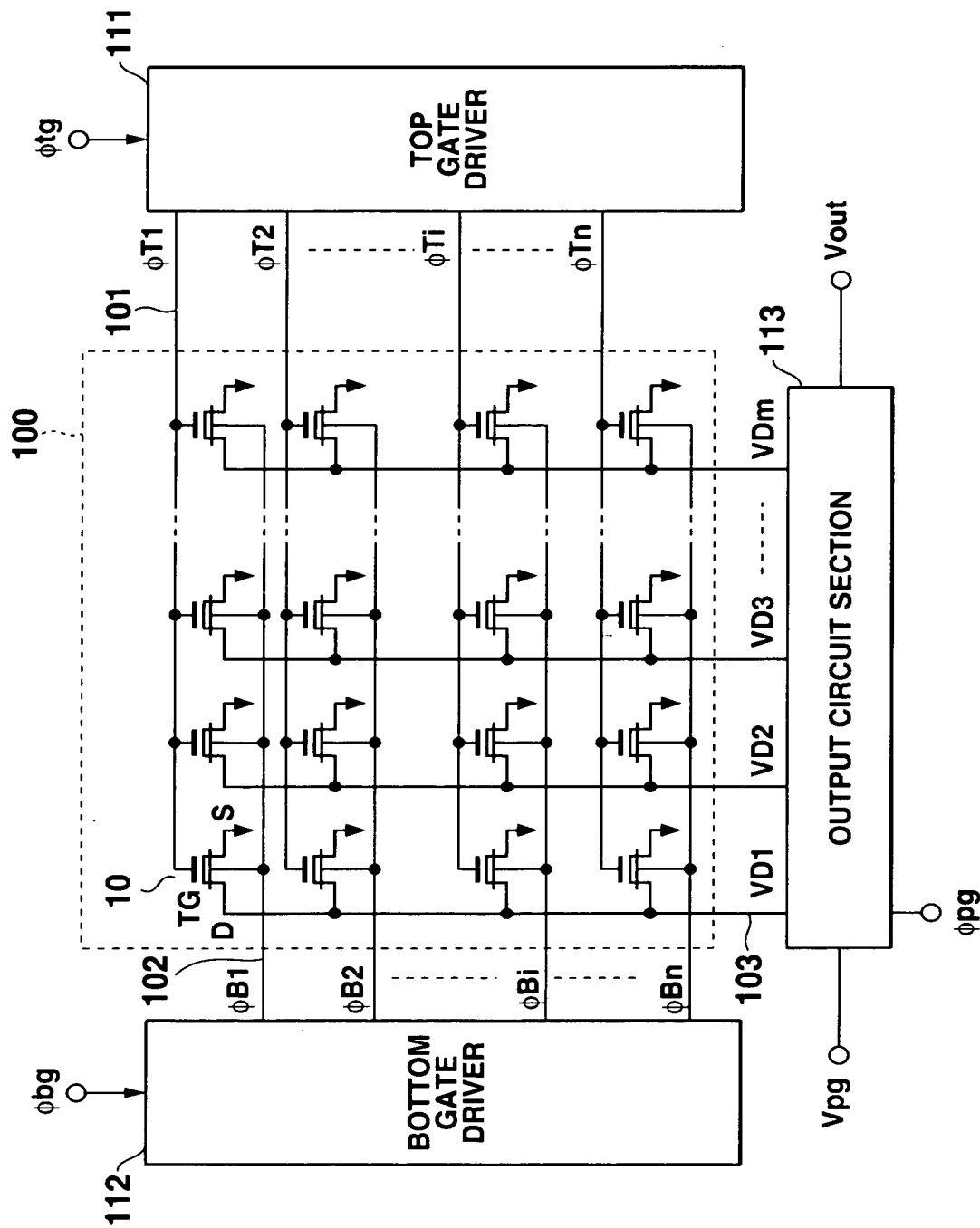


FIG.40

PRIOR ART

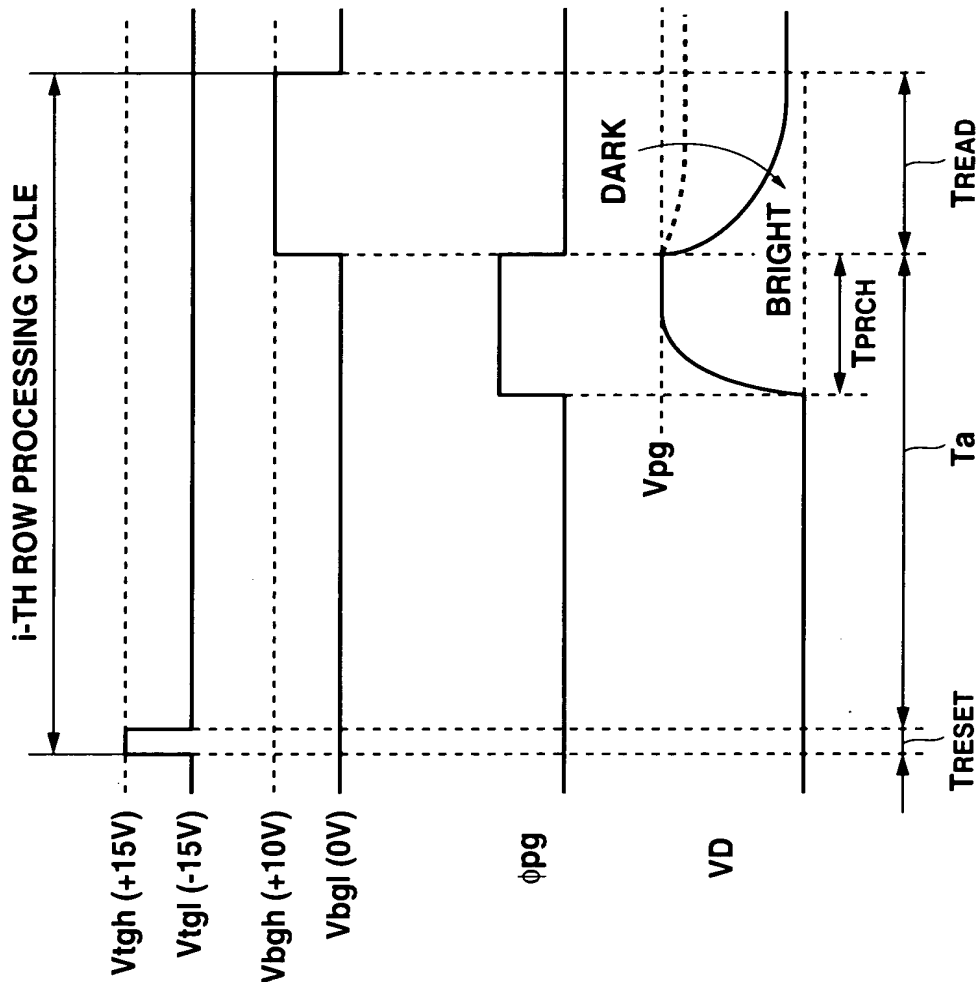


FIG.41A

FIG.41B

FIG.41C

FIG.41D